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GENOMic

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N-G-Tube

→ A small size tube insert in stomach through nose.

purpose :—

① Provide Feeding

② Gastric analysis. / stomach sample collection. ✓
{Check the pH of stomach} → Highly acidic

③ Gastric lavage / Stomach irrigation. ✓

Q. which sol^{n} is used for stomach irrigation :—

✓ⓐ N.S. Ⓑ Betadine Ⓒ RL. ⓓ H_2O

→ N.S. (Isotonic) → Most common used in irrigation. ✓

④ To decompress the stomach / Remove gases from stomach.

Q. which sol^{n} is not used for irrigation :-

ⓐ N.S. Ⓑ Betadine ✓Ⓒ Spirit ⓓ SBC.

↳ 70% Isopropyl alcohol

⑤ Prevent aspirate after stomach surgery.

Q A Pt. Shift in gastric ward after stomach surg. A N.O. identify NG Tube insert in Pt. Purpose of N.G. Tube.

ⓐ Provide Feeding → Avoid (to prevent infection)

Ⓑ Suction. ⟶

Ⓒ Stomach irrigation ⟶ stitches removal

✓ⓓ Prevent aspirate

↳ Because at incision site, release secretions

↓

Surgery under Gen. Anesthesia.

↓

↑se chance of aspiration.

Q. Bloody colour discharge obsr. by N.O. Ist Nsg. priority :-

ⓐ Inform Dr. ⓑ Suction

ⓒ Clamp the tube. ✓ⓓ Documentation.

→ (Normal for 24 hrs.)

→ Bloody discharge more then 24 hrs. → Inform the Dr.

Indications :-

① Unconscious pt. - gag reflex abst.

② Cleft lip & Cleft Palate.

③ Poisoning

Q. A Pt. came in emerg. after intake of poison. What is the first nsg. priority :-

✓ⓐ Inform the Dr. ⓑ Ask about poison.

ⓒ NG Tube insert. ⓓ Gastric lavage ⓔ give antidote.

Q. Pt. came in emerg. after poison. intake. Expected mgmt. by nurse :- Gastric lavage.

Q. Pt. came in emerg. after acid intake. Expected mgmt.

→ Inform the Dr. → Gastric lavage

✓→ Tracheostomy → E.T. Tube.

→ NG Tube insert.

Rational :- Maintain airway.

because - swelling in Larynx.

④ Decrease the acidic effect.

⑤ Give medication.

Procedure :—

→ Right Pt. Identification :— Check the ID Band
↓
'Wrist Band'

→ I/D Band in Neonate :- Leg
→ " " " Child :- Wrist

→ Check the Consent.

Q. Consent relationship b/w :-

ⓐ Nsg. Off. & Pt. ✓ⓑ Dr. & Pt.

ⓒ Hospital mgmt. & Pb. ⓓ Hosp. & attender.

e.g:- A Female admit in hosp. for abortion. Consent taken from.

✓ⓐ Female. ⓑ Husband ↓ attender. ⓒ a & b. ⓓ family memb.

Q. A Pt. complains anxiety before surgery (any procedure) What is the imp. role of Nurse :-

ⓐ Explain the procedure. ✓ⓑ Use communication

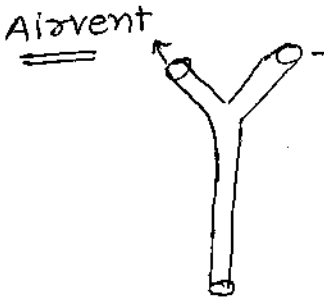
ⓒ Inform the Dr. ⓓ None of the above

→ Articles :— NG Tube → ① Single lumen.
② Double lumen.

eg:- dobhoff tube (smallest lumen)
- Cantor tube

→ Single lumen :- use :- provide feeding

→ Double lumen :- use :- suction
- Gastric lavage
- Stomach irrigation.



→ during suction airvent → open

Rational :- prevent injury in mucosal memb. of stomach.

Q. During stomach suction, level of airvent of NG Tube

✓ (a) above the stomach. (b) below
(c) on level. (d) anywhere

→ Prevent blockage of airvent.*

Q. accidently airvent of NG Tube block, during stomach suction, what is the imp. role of nurse.

(a) Inform Dr. (b) Replace the New tube
(c) documentation. ✓ (d) Push 30 ml air → Flush the ~~tube~~ airvent. (with NS !!)

Colour Size (Fr).

B - Blue - 8 → Neonate
B - Black - 10 → Infant
W - White - 12
G - Green - 14 } - child
O → Orange - 16
R - Red - 18 } - Adult → Female → 16
→ Male → (18) priority
Y - Yellow - 20 - Abnormal.

BB - W - GORY

Adult = 18 — Red wine

Q. Size of NG Tube used in Adult :-

(a) 18 mm. (b) 16 mm

(c) 5.9 mm. (d) 14 mm.

1 Fr = 0.33 mm

→ Sterlisation of NG Tube :- Radiation method

Rays :- Gamma rays

* 2% xylocaine Jelly :- used for anesthesia & lubrication

2 Types :- → water soluble Jelly

→ Oil Soluble " :- avoid

*Rational :- ↑se chances of aspirate → cause pneumonia.

Q. Which of the Following chem. used for NGT insertion For anesthesia :-

(i) 2% xylocaine Jelly

(ii) 2% water soluble xylo. Jel

(iii) 2% oil soluble xylo Jel. :- avoid

(iv) K.Y. Jelly

↳ used during surgery / under anesthesia.

↳ act only as lubricant.

→ Lubricate :- 3-4 inch of NG Tube by. Gauge piece. From tip.

Q. During surgery (Gen. Anesthesia given) stomach, Dr. prescription for NGT. insert, which chem used for lubrication :-

(i) 2% xylo. Jelly.

(ii) KY Jelly

(iii) Liquid Paraffin.

(iv) Oil soluble xylo. Jelly

⇓

2nd priority.

1% Soda bicarbonate :— To clean the nostrils.
— Buffer soln → Homeostasis.

✓⇒ Avoid :- Spirit :- 70% isopropyl alcohol.
↳ can cause irritation, headache, confusion.

→ pH strip :—

→ Syringe :- 2 Type :- ① 10 cc → check the placement
② 50 cc.
↳ provide feeding

→ Glass of water with straw :-

→ Stethoscope

→ X-Ray machine

Q. Feeding :- ② Types.

↓ ↓

Continous Feed. Bolus Feeding.

① Continuous Feeding :—
- Give :- Pt. not tolerate very much feed one time.
- In this feeding, max time & small amount feed.

② Bolus Feeding :- aka 'Syringe Feeding', 'Gravity Feeding'.
→ Large amount of Feed, provide in less time.
→ Gravity Feeding :- complete within 20 min.

- Syringe kept at height & not pushed.
- movement by

Q. Which position used during providing Bolus Feeding.

(i) Supine (ii) Semi-fowler

✓(iii) Fowler. (iv) Lateral

Rational :- Prevent Regergitation, because cardiac Sphincter is relaxed.

→ Fowler position maintain for 30 min after feeding

Q. ✓Which position used during continuous feeding?

(i) Supine. ✓(ii) Semi Fowler (iii) Fowler. (iv) Lateral.

↓ comfort position for long duration.

Procedure :-

Position :- High Fowler*

Rational :- Easy to Swallow. ☺

⇓

→ Reduce the NG Tube flexibility.

Q. N.O. reduce the NG Tube flexibility.

(a) Tube in Freezer

(b) Tube in Fridge. → 2nd priority.

✓(c) Tube soaked in Ice/ cold water → Sterile ☺

(d) " " " Tap water.

→ {depends of on height}

*Measurement :- Tip of nose to ear lobe then xiphoid proc

* Accurate :- Tip of nose to ear lobe then 1-2 inch below xiphoid proc.

Or :- Tip of nose to Ear lobe then 1-inch above the Umblicus.

Or :- Tip of nose to Tragus then 1-2 inch below xiphoid proc./ lower part of sternu

Q. Measurement of NG Tube :—

ⓐ Tip of nose → Ear lobe → xiphoid proc.

ⓑ " → Tragus → 1-2 inch below xiphoid proc.

ⓒ " → Stomach

ⓓ Mouth → Stomach.

Site Selection :- Left Nostril *

→ NG Tube insert through left nostril.

*→ Avoid :- Rt. Nostril (because septum dividation ↓ * ↑se chances of nose bleeding)

Q. During NG Tube insertion, accidently cause of nose bleeding, what is the imp. role of Nurse?

ⓐ Give supine position and hyperextent the head.

ⓑ . Sitting " " hyperextent the head.

ⓒ " Sitting & lean forward the head. → Epiglottis closed

ⓓ " semi fowler and hyperextent the head.

Rational :- Reduce chances of aspirate. **

→ also give → Cold application

→ pinch the nostril.

→ instruct Pt. to breathe by mouth.

Then Xylocaine gelly apply on tip of tube

↓

Clean the nostril with Sodabicarbonate

→ direction used for NG Tube insert →

⇓

* backward than downward

ē tuward (घुमा घुमावे)

Q Which of the following direction used for NG Tube Insert.

(a) downward → backward.
(b) back → down. → 2nd Priority.
(c) regular straight
✓(d) back → downward & tuward.

• Instructions to Pt. →

Tube swallow as water.
↓
Tube reach at oropharynx.

→ Rational :- Prevent tube move in tracheal area.#

Q. A N.O. observe cough / RDS. (Resp. distress Synd.) during N.G.T. insert. What is the I Priority :-

(a) Remove the tube.
(b) Inform the Dr.
(c) Documentation
✓(d) Pull back & Reinsert subside the condition.
↳ 1 inch
⇓
condition subside
↓
Instruct the Pt.
↓
Tube swallow as water.
↓
Tube insert at marking point.

* If Pt. is unconscious:— Give Semi-Fowler position & Lean Forward the head.*
↳ Epiglottis → closed.

* In case of Nasal Surgery / Infection of nostrils:-
NG Tube → through Oral / mouth → measure → lateral lip to tragus to 1-2 in. below xiphoid data.

⇓
Check the Placement.

**

Q Which method is used for check the correct placement of NG Tube:-

ⓐ X-Ray → check the correct place. because its Dr's order → accurate

ⓑ Auscultation

ⓒ Aspirate

ⓓ Bubbles present in pot. → Gas remove from stomach.
↳ Solⁿ used :- KMnO₄

Nsg. Order :- (i) Aspirate. (ii) Auscultation. → IInd.
↓
Ist priority

Aspirate :- aspirate the stomach content.
↓
check the pH → by pH strip.
↓
acidic (highly)
↓
Remaining content → reinsert.

→ of 5 ml aspirate
2 ml → pH
rest 3 ml → reinsert → To prevent elec. imbalance.

Q. Stomach content accidently discarded :-
↳ Fluid & Elec imbalance → Na⁺ #

Q. PL. suffering from diarrhoea, which elect. imbalance :-
→ K⁺ (Banana - richest source) ☺

Auscultation :- 5-10cc air push by help of syringe.
↓
auscultation by help of Stethoscope
↓
Sound
↓
Whoosing Sound**

IInd priority cause it can lead to confusion b/w whoosing sound & stomach's peristalsis sounds.

Q. What is the method used by NO. for check the correct placement of NG Tube

ⓐ X-Ray ⓑ Auscultation → IInd. ⓒ Aspirate → Ist priority ⓓ bubble

Q. What is the most widely method used for check the correct place of NG Tube in clinical practice

→ Aspirate → I

→ Auscultation. - II

→ During NG Tube, Insert, Health Care Worker stand in left side*

→ Tube hold in* left hand → Insert → Fixation

Provide the Care. / NG Tube Care:-

- Provide the Feed :- * Before every feed, check correct placement of NGT. (aspirate)

- In Special Pt., Unconscious / Traumatic Pt. → Peristalsis move.

↳ Check the Residual Volume before next Feed.

↳ Normal R.V. of Stomach = 100 ml*

* >100 ml → Avoid the Feed.

* Residual Volume → Reinsert in stomach.

↳ Rational :- To prevent from Metabolic alkalosis.*

Q. A N.O. accidently discard the R.V. of stomach. which complication arise:-

ⓐ Resp. acidosis.

ⓑ Resp. alkalosis.

ⓒ Metabolic acidosis

✓ⓓ Meta. alkalosis.

Q. In Severe diarrhoea, change in acid-base balance:-

Normal med. of Intestine

↳ alkaline med.

Metabolic acidosis

Q. RV. → reinsert, then nsg. priority :-

✓ⓐ Check the peristaltic movement → Normal 16-20/min.

ⓑ ↑se fluid intake

ⓒ ↓se. fluid intake

ⓓ documentation.

Q. A. N.O. Check. peristaltic move. after reinsert RV. of stomach, than imp. role of Nurser

(a) Give lateral pos.

(b) Give left lateral pos.

(c) Give right lateral pos. ē fowler → Maintain gravity. ↓ Stomach easily empty

(d) Trendelberg pos.

* Gap b/w aspirate & Feed ⇒ 10 min.

* Gap maintained → Aspirate after Feed → 20 min.,

* Feeding temp. → as. a room temp.

Q. If more than room temp. → cause of diarrhoea?

→ Medicine give by NG Tube. (Tab./capsule):-

Crush into Powder
↓
dilute in distill water (15-20ml)
↓
push by help of syringe
↓
Flush the tube ē water**
↓
Clamp the tube for 30-60 min.**

→ Flush the tube after Feed ē NS.

Q. What is the imp. role of N.O. after give medicine through NG Tube :-

(a) Suction.

(b) provide feed

(c) Clamp the tube for 30-60 min. ↓ *For better absp.

(d) Give lateral position.

→ Change the NG Tube every 7th day. - as a hospital policy. ↓ W.H.O.

* Continuous feed give for 24 hrs.
- Complete the bag of continuous feed. → Every 4 hrs *
Rat. → To Prevent infection

* Remove the NG Tube:—
→ Check the Gag Reflex :- Give sip of water → Swallow. *
If swallow sip of water → Gag ref. ⊕nt. → remove.

* → Gag ref. also checked by using - disposable tongue depressor and touch the oropharynx.
↓
Complaint by Pt.
↓
Feel Regergitation
↓
Gag Ref. ⊕nt.

→ Instruct Pt. :- * Take deep breath & hold. & remove the NG Tube.

Rat. → Stomach content come with N.G. Tube and goes in tracheal route.

⊕ After remove NG Tube → Give instruction to Pt. :-
→ Feed in small quantity & frequently.
→ Pt. complaint feel of Regergitation :- Maintain fowler position.
↳ This is normal finding. (24hrs.)

Complications:— vomiting
- diarrhoea
- infection.
- Pressure sore

* Vomiting :— cause :- Improper Position.

Nsg. Priority :- Stop Feed & Provide Prone position & tilt the Head.
(Prevent aspirate of secretion).

→ IInd priority :- Stop Feed & provide lateral position.

* Diarrhoea :— cause :- Feeding temp. > Room temp.

* Infection :— cause :- ~~hyg~~ unhygienic techniques & improper handwashing.

→ Change the Fomites or clean them every 24 hrs.

→ In case of Cont. Feed, complete the bag in 4 hrs.

* Pressure Sore :— cause :- due to regular pressure.

Mgmt. :- Change the fixation site.

Q. Most common complication of NG Tube among above ~~are~~ is :-

→ Diarrhoea

Q. Prior to administerating oro-gastric tube feed to an ~~adult~~ infant the nurse should perform all except :-

(a) Aspirate the tube → fixation
(b) Slowly instill 5 ml water
(c) Measure the abdominal ~~girth~~ girth → checked
(d) Place in semi fowler position.

Q. Height of Siphon during Gastric Feeding →

(a) 10 inch. (b) 12 inch (c) 14 inch. (d) 18 inch.

TracheoStomy

Artificial opening in Trachea through neck.

Purpose :- ① Maintain the airway.
② Remove excessive secretions.
③ Patient on Ventilator.

Indication :- ① Upper airway obstruction. (blockage x)

S/S :- Noisy Resp. (Strider resp.) / (Emergency resp

ET can cause irritation in obst. & can diverge due to obst. ↓ Bleeding

e.g:- Laryngeal obstruction,
- Laryngeal Edema, Laryngeal Carcinoma/ tumor.
- Swelling in Larynx.

② Acid swallow → cell in larynx → dest → blo obstruct.

③ Facial & Neck burn.

gmp ④ Severe diptheria → Bull neck appearance

* After remove thyroid gland →

** Q which instrument placed at bedside in a post-thyroidectomy

(a) Tracheostomy ~~test~~ set → Rat :- Laryngeal Spasm* because level of Ca^{+2} ↓

(b) Suction Catheter

(c) ET Tube

(d) Ambu bag

** → After thyroidectomy, one piece of parathyroid gland, implant in sterno- ~~cleido~~ cleido mastoid muscle.
(Parathyroid also c thyroid → in order to maintain level of PTH).

Q. A Pt. came in emerg. c strider resp., what is Ist Nsg prior

(a) Tracheostomy tube insert.

(b) Intubation → ET Tube

(c) Inform the Dr.

(d) Give O_2 therapy.

(e). Collect the tracheostomy set.

→ Expected Mgmt by Nsg off in above ques? → (a) Tracheostomy Tube insert.

* In upper air obst. → Voice → Horsaness Voice.
** Long duration Hoarsness voice that are clinical symptoms for Laryngeal Carcinoma.

Contraindications:—

1. Neonate. < 1 Yr. child. (because of small tracheal rings - can't be palpated).
↳ ET

Classification / Types:—

① A/c to Placement
② " " Situation
③ " " Duration

* A/c to Placement:—

① Upper T.
- Tracheostomy performed above the isthmus of Thyroid G.
- Ring:- 2nd & 3rd
- Incision:- Horizontal

② Lower T.
- Tracheostomy performed below the isthmus of T.G.
- Ring:- 3rd & 4th
- Vertical

* A/c to Situation / Condition:—

① Emergency
→ Save the life of Pt. (Main Purpose)
→ Incision:- Large
↓
'Vertical'
→ Lower Tracheostomy performed
→ Ring:- 3rd & 4th Tracheal ring

② Pre-Planned
→ Laryngeal Carcinoma (ongoing Rx)
→ Incision:- Small
↓
'Horizontal'
→ Upper T. performed
→ 2nd & 3rd Tr. ring

* A/C to Duration:—

① Short duration
'Temprory Tracheostomy'
→ performed in Emergency cond^{n}
→ Lower Tracheostomy
→ Ring:- 3rd & 4th
→ Incision:- Vertical.

② Permanent → Long duration
'Laryngeal Carcinoma'
→ Pre-planned Trache
→ Upper Tracheostomy
→ 2nd - 3rd ring.
→ Horizontal.

** * Q. M/c Tracheostomy performed in the clinical practice:- → Routine?
(a) 2nd & 3rd Tr. Ring.
(b) 3rd & 4th Tr. " → Most of them done in emerg → Lower T.S.
(c) 2nd & 4th "
(d) 1st & 2nd "

Articles :-

1. Tracheostomy tube:—

① Plastic Tracheo. tube (Temprory use / Short time)
Cuff T.T.
Uncuff T.T.
→ Child. (<8 yr. age) (bcz sub-glottic area is narrow)

② Metal tube
↓
Permanent tube

* M/c used in clinical practice
→ Adult.

⇒ Adv. of Cuff Tube:- 1. Proper fix at proper Palace. (Prevent dislocation)
2. Prevent the air leak (Maintain the Tidal Vo
3. Prevent the infection. (Prevent entry of Ag.)

Q. A Dr prescription for Tracheostomy insert in Pt. This Pt also diag. for narrow sub-glottic area. Tube used for —

(a) Cuff T.T
(b) Uncuff. T.T.
(c) Metal tube
(d) Suction Catheter

→ Cuff inflate by air.
→ 5-10 cc air pushed in cuff.
→ Pressure of trach. cuff = 20-25 mmHg *
→ pressure checked by - Anroid Manometer
→ " " every 8 hours.

Metal Tube :- (3) Parts. (i) Outer Cannula
(for Permanent use). (ii) Inner Cannula
(iii) Obturator / Guide wire

Outer Cannula :- fixed at inner wall of Trachea.
- This is not-removable part. (Permanent-fixed part)
- Permanent open the airway.

Inner Cannula :- Fixed in outer cannula by Flip lock.
- This is removable part.
- Care of Inner Cannula → self by Pt.
↳ • Remove the inner cannula
⇓
• Soak in Soda bicarbonate for time = 10min
(Rat → Loose the mucus)
⇓
• Remove mucus in running / tap water by help of brush
⇓
• Sterlization :- Boiling method
⇓
• Then maintain the temp
⇓
• Insert to back

* water purification in household I Boiling Method

Obturator/Guide wire → Help for Trache. tube insert in Trachea

* Double Hook Retractor → visualise the Trachea.
* Tracheal dialator → Dialate the trachea until tube insert in trachea.
* Suction Catheter → ✓size → 14 French] - gdeal catheter used for Suction.
  ✓colour → Green
  * M/C used in clinical practic
  - Adults.

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* Tracheostomy Tie / Ribbon :- use in outer fixation.
  * Fix at lateral side of Neck. by help of stitches.
  - Change the ribbon & new tube

Q. A N.O. check. (Trach. Ribbon damage) → then replace the ribbon by

N.O. →
✓(a) First apply new ribbon then remove old ribbon.
(b) First remove old ribbon then apply new ribbon.
(c) Apply the new ribbon and old one unremoved.
(d) All of the above

* Call bell :- use for safety purpose

GMP
Chemicals :-

→ 1. Sprit :- 70% Isopropyl alcohol.
- used for clean the site.

Q. Which soln used For quickly sterlization
(a) Sprit. (b) Betadene (c) H_2O_2 (d) Savlon
↓
in 0.5 sec. (fastest)*

2. Betadine :- (5% Povidoiodine) → used for dressing

3. Soda BiCarbonate :- Use for inner cannula (loose the mucus)

4. H_2O_2 (Hydrogen Peroxide) → {Half strength use}
   - Clean the inner wall of outer Cannula.

5. N.S.

**gmp.

Q. which of the following sol^n used for clean the Tracheostomy?
(a) Sprit. (b) betadine. (c) H_2O_2 (d) H_2O_2 + N.S.
(e) All of the above.

(d) → approved by W.H.O.
→ Non-Irritating sol^n
(used in cleaning open wound)

Anesthesia :- (Local) → 2% xylocaine injection
⇓
Method for local anes. → Z-Traction / 'Zig-Zag'

Gron (injectable) also given by Z-traction. (3-4ml/5ml each side)
- I/M - To prevent leakage and pain. (large molecule)

Q Gron Inj. give by Z-traction (zig-zag) because:-
(a) Prevent leakage → Ist Priority
(b) Prevent pain → IInd
(c) Pt. Comfort
(d) Better absp.

K.Y. Jelly :- Lubricate the tube.

Stethoscope

X-Ray machine

* Ambu bag :- capacity w.r.t to age group.-
- Adult → 1200 cc
- Child → 750 cc.
- Infant → 500 cc
- Neonate → 250 cc

Suction Machine :- Pressure :- 100-120 mmHg (W.H.O. Guideline for Adult).

- Child :- ~~80-100~~ 100 mmHg
- Neonate :- 60-80 mmHg

{ after + tube insertion for suct. of mucus

* If mucus not removed by 100-120 mmHg, then use the pressure (max press. 150 mmHg) → but step by step.

→ Mucus → thick and curdy → still not removed by 150 mmHg.

↳ Push 1 ml N.S. (→ loose the mucus).

↳ only 2 times. → Max. suct. press. → 150 mmHg

Procedure

Position :- Give Supine position and apply Sand bag under the shoulder.

(Rat. :- Hyperextend the head) → Prominent the Trachea → Easy identification of Tracheal Rings

→ This position is aka 'Rose Position' **

↓

Clean the site :- by sprit.

↓

Incision

↓

- Soak the blood / Suction

↓

- Insert the tube in Trachea.

↓

Check the placement → by X-Ray → I^st Priority.

↳ by Auscultation

⇓

II^nd prior.

↓

- Air push by help of Ambu Bag.

↓

Auscult. by help of stethoscope.

↓

'Whoosing Sound'

↓

Then Fix the tube.

(i) Internal fixation :- Push 5-10 cc air by help of syringe (20-25 mmHg)

(ii) Outer Fixation :- Apply the ribbon / tie. → lateral side

↓

Cover the Fistula c wet Filter Gauge piece (→ by NS.)

opening ↙ ↳ Humidify the air.

Q. Cover the Fistula of Trach. ~~by~~ For prevent foreign body aspirate

(a) Swab.

(b) Filter Gauge piece

(c) Wet Filter " "

(d) Vaseline gauge " → cover open wound → in chest drainage

(e) 2×2 gauge piece → I/V therapy

* Swab :- 2 types

① Dry :-

→ after injection use.

② Wet (sprit swab)

→ before every inj. clean the site c wet swab.

Insulin Inj :- * Clean the site c sprit swab.

{- Sprit destroy the insulin }

* diabetic Pt :- Nsg prior → Prevent infection.

clean the site by sprit swab and wait till the site dries.

↓

after that inject insulin.

* Post Tracheostomy Pt :-

1. M/c Problem identified by N.O. in a post-trache. Pt :→ Pt unable to speak.

Mgmt Provide call bell, Copy-Pen, non verbal communication

Q. Safety mgmt of a post trache. Pt :-

(a) call-bell (b) copy-pen (c) Non-verbal comm. (d) Facial exp.

Q Most effective communication method in a post-trachea Pt :-

(a) call-bell (b) Copy-pen (c) facial exp (d) Read the lips

Q. A post-trache. Pt. want to speak. Then Nsg. priority → You can speak

→ Give instructions before speaking → Take deep & breathe → Speak

↳ (Self. hyper ventillation)

↓

Then put Finger on stoma

(It will open Fenestrate valve

↳ air → larynx) ↓

Speak ☺

→ If Pt. want to shave :— In Front of mirror.

→ Give Psychological Support.*

{ bcz his body image is disturbed }

Care of the Pt. :-

Suction :- perform regular suction.

* A N.O. identify Edema, Hematoma (int.), redness around the stoma of trach., then just inform the dr.

→ Suction time :- A/c to WHO :- First 24 hrs. → Suction performed every 30 min.

then after every 2-4 hours.

or as Need. ✓

Q What is the best time for trach. suction :-

(a) Every 30 min (b) Every 2-4 hr. (c) Both if pt require. (d) If need ✓

* Suction technique :- Intermittent ✓**

Q Suction perform by a NO :-

(a) Step to Step (b) Regular (c) Until mucus remove

✓(d) Intermittent.

→ Pressure use for suction. → -ve pressure

→ Suction performed by N.O. → When Noisy resp / Strider resp. in A

*Q. How will N.O. identify suction is req. in a post-trach. Pt?

✓(a) Strider resp. (b) Labered resp (c) Tachycardia

(d) Tachypnea

Before Suction → check the Patency of suction catheter.
→ by suction of N.S.
↳ after that → Hyperventilate the Pt.
(give 100% O_2).

Q. What is the imp. role of Nurse before suction. → Hyperventilate the Pt. (before 30 sec)*

* Hyperventilate until → O_2 saturation (SpO_2) reaches 100%. [Monitor]

* Suction catheter insert in trachea :- 6-8 inch
Ideal
Max / used in deep suction.

* Suction performed during insert the catheter.
or during withdrawl the catheter
**

Q. Suction :- M/c method used in clinical practice for suction :-
(a) During insert the catheter
(b) during withdrawl & rotated → complete mucus remove in single time.
(c) A/C to need
(d) None of the above.

Q. Suction duration :- 10 sec* → Max. (If. use → ~~Hypoxia~~ Cardiac arrest)

* Suction performed :- position :- Semi-fowler*

gmp
Q. During suction, cather insert in trachea meet a slight resistance, what is imp. role of nurse?
(a) Inform the dr.
(b) ~~comple~~ insert forcefully
(c) Pull back & re-insert. (1 inch)
(d) documentation

Q During suction, catheter insert in trach. tube. A N.O. identifies cough / R.D.S. in the Pt. what is the imp. role of Nurse—

(a) Inform the Dr.

(b) pull back & re-insert, subside the conditions

(c) - complete removal (To prevent complications) ✓

(d) Documentation.

* ⇓

Hyperventilate and re-insert

(1)

* During Suction, imp. role of N.O. → Check the O_2 saturation & * pulse rate on Monitor *

Q. During Suction (Tracheostomy), A N.O. identifies Hypoxia on monitor. what is the imp role of N.O. → Stop the suction & Hyperventilation.

Q. In above Q. → complication → Bradycardia (HR↓) – Vagus nerve stimul.

↳ Stop the suction & Hyperventilate

↓

→ After Suction – Nsg priority :- Check the pulse rate & O_2 saturation. *

Q How will identify by N.O. that Suction is normal performed

(a) Tachycardia (c) Pulse rate - normal ✓

(b) Hypertension (d) Bradycardia.

In case of :- after suction – Bradycardia → (Stimulation of vagus nerve)

→ Cycle will continue till tracheostomy tube removed

Decanulization

*Q. Meaning of Decanulization :-

(a) Remove the cannula

(b) Remove the suction catheter

(c) " " trache. tube ✓

(d) " " E.T. tube

Complications

- Classification :- 3. Types.
  - (i) during tracheostomy
  - (ii) Immediate : (For the next 24 hrs.) or upto 72 hrs.
  - (iii) Delayed :

→ During Tracheostomy :-

1. Laryngeal Palsy :- For life time (damage nerve).
   - S/S :- Horasness voice
   - Unable to speak

also symp. → Bleeding → aspirate

→ Immediate :-

1. Dislocation of T.T.
2. Obstruction of T.T.

* Disloged → ~~main cause~~ :- ~~coughing~~ #
  - → displacement of Tracheostomy Tube. → compesation
  - → cause :- cough (↑se secretion of mucus & improper suction)
  - → Symptoms → strider resp.
    - → Dyspnea.
    - → Restlessness
    - → Pt. able to speak. (air leak).
  - → Nsg. priority / Mgmt :-
    1. Provide Rose position
    2. Grab the suture.
    3. Use tracheal dilator.
    4. Tube insert by help of obturator.
    5. Then inform Emergency team

Q. Which of the following articles at bed site in a post-tracheo-

Pt :- (a) Suction Catheter. (b) Ambu bag → All are correct

(c) Obturator (d) Suction machine → priori-Obturator

* Obstruction of Trach. Tube:-

→ Cause :- ↑se secretion of mucus.
due to tracheal irritation.
- improper / irregular suction

→ S/S :→ Strider / noisy resp.
→ dyspnea
→ restlessness, irritate, discomfort.

→ Nsg mgmt / prior.:- 1. Take deep breathe (Pt.).
2. Hyperventilate Pt.
3. Suction.

⇒ Delayed Complications:-

1. Tracheomalasia
2. Tracheo-Esophageal Fistula.
3. Tracheal innominate arterial bleeding. (Tracheal Bleeding)

1. Tracheomelesia :— Softening of Tracheal wall.

— Cause :- prolonged pressure by trach. cuffs on Tracheal wall.

→ S/S. :→ O_2 sat. ↓se. (due to air leakage).
→ Restlessness.
→ Pt. able to speak.

→ Nsg Mgmt. / prior.:- 1. ↑se the cuff pressure.
* 2. Replace the tube c
* larger size tube (uncuffe

* Tracheomelesia not treated, can cause Tracheo-Esophageal Fistula.

2. Tracheo-Esophageal Fistula :- abnormal opening b/w trachea & Esophagus.

→ Cause :- Don't treat the Tracheomelesia (Friction)

→ S/s. :- 1. Strider resp. ✓
2. Food particles & mucus (suction). ✓

→ Nsg Mgmt :- 1. Stop the Oral route → Inform the Dr.
2. Prepration for N.G. Tube Insert.
3. Surgically close the Fistula.

3. Tracheal Innominate Arterial bleeding :- Tracheal bleeding.

→ Cause :- distal Part of T.T. (Regular Friction at tracheal wall) → Trach. artery → Rupture → Bleeding

→ S/S :- 1. Strider resp. ✓
2. Blood & mucus during suction ✓

→ Nsg Mgmt :- 1. Apply direct pressure on tracheal wall by palm. (slight Press/ Gentle pressure)
2. Pt. Shift in O.T. ✓

* In Placenta Previa, provide rest in Fowler position.
* Care of PID Pt., Maintain the Fowler position,
Rat :- Prevent abdomen cavity infection.

June, 18, 2022.

E.T. Tube

- **Intubation :-** Insert the E.T. Tube.
- **Extubation :-** Remove the E.T. Tube

→ A small size cylindrical tube insert in trachea through Oral or Nasal route.

- **Purpose** → Maintain the airway [10-14 days]* → For oral / For Nasal.
  - Used For short time
    - Rat → Prevent pressure sore.
  - → Remove Excessive secretions.
  - → Use the Ventilator. Pt.

*pressure on mucosal memb of laryngeal wall.

Q. M/c Tube used in clinical practice for maintain the airway:
✓a) Intubation. b) Tracheostomy

→ **Advantages :-** This is a non-invasive procedure.
↓
No need of Incision
↓
No chance of Bleeding ✓
↓
No chance of Aspiration ✓
↓
Rapid Performed.*

- **Indications :-** Pt. not effort for self breathing. ✓
  - Surgery performed under Gen. Anesthesia. ✓

e.g:- ① Abdomen cavity surgery. ✓
② Chest surgery ✓
③ Brain surgery ✓
④ Phrenic Nerve Injury ✓
⑤ Brain Trauma. (Brain death) ✓

Q. A Dr. Prescrip. for Surgery under Gen. Anes. Maintain the airway by :-
a) Simple Face mask.
b) venturi mask. → Earlier before 2016.
c) Tracheo. Tube.
✓d) E.T. Tube → currently ✓

• Contra-Indications :- 1. Upper airway obstruction.
e.g. → Laryngeal Carcinoma, Spasm, Swelling
→ Pt. swallowed Acid.
→ All other indications of Tracheostomy.

• Procedure →

1. Right Pt. Identification.
2. Check the Consent.
3. Use communication if anxiety +nt.
4. Prescribe Articles. :-

(i) E.T. Tube :- 2 Types.

(a) Rubber E.T. Tube
- only used for 24 hrs.*
→ bcz use pressure on laryngeal wall
↓
pressure sore
→ decreased O_2 flow.*

Heat sensitive
↓
Use in diameter of tube.

(b) Plastic → P.V.C. → Heat resistant
- M/c used
→ Used for more than 24 hrs → 10-14 days.
- Low press. on laryngeal wall
↳ No chance of press. sore
→ Good O_2 flow.
→ Transparent → visualise the secretions - Suction easily performed.

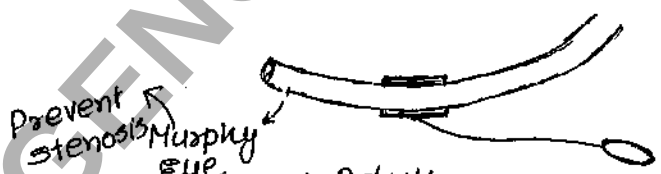
Size

age + 3.5/4 cuff.

age + 4/4 uncuff Tube

1

• Cuff Tube



→ Adult.
→ M/c used.*

• Uncuff Tube
→ Children (< 8 years).
(bcz of narrow sub-glotus area)

• Size :-

1. Neonate → 2.5 - 3.5 mm (Internal diameter)
2. Infant → 4 - 4.5 mm.
3. Child → 5 - 6 mm.
4. Female adult → 7 - 7.5 mm
5. Male → 8 - 9.5 mm.
↳ Priority ©

→ Same in Tracheostomy.

* Size of E.T. Tube in Premature / Preterm → 2.5 mm
* " " " " Neonate → 3.5 mm.
(Both Early & late).

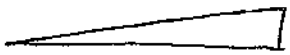
* Size → small Med. Large
↳ uncuffed.

(ii) Laryngoscope :- use :- Visualise the larynx.*
- also used as Tongue depressor.

Size :- 0-4
0 → Premature, Neonate
1 → Infant
2 → child
3, 4 → Adult ↔ Female, Male

↳ Blade :- 2 Types:-

(i) Straight



- aka → Miller Blade
- used in Neonate, Infant, child.

(ii) Curved.

- aka → Macintosce Blade
- used in adults.

- NBM :- Before - 4-6 hour. (Prevent regurgitation).
↳ In Emergency, use local anesthesia.

** → Magils Forceps :- use :- Remove Foreign particles From mouth

→ E.T. Tube re-insert in Emergency.

→ Baugie Catheter :- small size catheter
→ Tip → Curve shaped tip.

Use :- ✓ Used for Intubation → in case of resistance.

Q. During intubation, meet a slightly resistance, which technique used by health care workes for intubation.

a) Insert Forcefully.

b) Pull back & re-Insert

✓c) Burping technique

d) insert Trache.

* • Burping Technique :- Slightly pressure on Crico-thyroid Cartilage against Oesophagus.

Q. Which instrument used during intubation in case of resistance:-

a) Stylet wire (b) Ambu bag.

c) Suction Catheter ✓(d) Bougie Catheter

• Suction Catheter :-

	Size	Colour	Use
	5 →	Grey →	Smallest → Neonate, Premature
	6 →	Light Green	→ Infant
	8 →	Blue	
	10 →	Black	→ Child
	12 →	White	
Ideal →	✓14 →	Green →	Adult
	✓22 Fr. →	Violet. →	Mucus & Clot.

• Syringe :- 10 cc

• X-Ray machine

• Suction machine

• Stethoscope

• Ambu Bag.

• Anesthesia :- Short acting anesthesia
eg:- Midazolam

• K.Y. Jelly :- Lubrication of Tube

• Position :- 'Sniffing Position'

↳ Give supine position & pillow apply under the Neck. ↳ slight extend head

↓

Visualise the Oral Cavity

↓

Perform Malampati Examination.

(3-4 Finger mouth opening)

↳ Normal opening

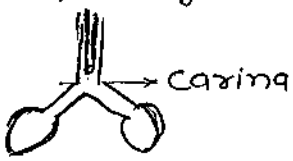
⇓

Insert the E.T. Tube

⇓

Check the Placement.

↓ X-Ray (1st priority)



↳ 1-2cm above the caring

⇓

Fixation

↓ Auscultation

↳ by AMBU Bag.

↳ sound :- Whooshing Sound.

• Internal :- Inflate the cuff

Air :- 5-10cc

Press :- 20-25 mmHg

• Outer Fixation :- Mid point of Oral Cavity,

⇓

← Gauze piece apply b/w Lips & ET Tube

→ change gauze pc when it gets wet.

prevent :- pressure sore

• Care of Pt. :-

→ Suction :- Same as Tracheostomy

→ Oral Care :- Give every 4 hr.

• Chem. used :- N.S. or $\{H_2O_2 + N.S.\}$

• If Pt is Unconscious.

- Position → (i) Prone (ii) Lateral. {Rat :- Prevent aspirate}

• Pt. on Ventilator :-

- Check the Sound (Beep) :-

① Low Beep Sound :- Cause :- Air leak from tube connection.

- Nsg prior :- Check the connection of Tube

② High beep sound :- Cause :- Obstruction in ET Tube due to mucus.

- ✓ Nsg prior :- Perform the Suction (after Hyperventilation)

• Restrain the Pt. during Intubation :-

- Rat :- Prevent dislocation of Tube.

• Remove the tube :- after Dr. Prescription.

↓

* Hyperventilate → 100% O_2

↓

deflate the cuffs.

↓

Remove the Tube

gmP.

• After Extubation → Post-extubation Pt.

Q. Which instruction is given to a post-ext. Pt. by a N.O. :-

→ I :- deep breathing exercise & cough.

↳ self hyperventilation.

↳ To remove mucus bcz of swelling in larynx.

Q. A Post-ext. Pt. complains for Horasness voice. What is the gmp. role of Nurse :-

(a) Re-intubation

(b) Suction.

(c) documentation → Normal Finding bcz of - Laryngeal Edema.

(d) Inform the Dr

→ Which instruction given to Pt. by nurse in above quest?

Ans. Normal finding → ✓ deep breath and coughing exercise

→ ✓ Limit Talk.

Q. Accidently, A Pt. Pull back the E.T Tube, what is the imp. role of Nurse :-

(a) Re-insert the E.T Tube

(b) Complete remove the Tube & maintain the airway

(c) Inform the Dr.

(d) None of the above

↓ deflate the cuff. → ↓ Visualise the larynx

↓ If no injury

↓ Re-insert

⊕ ← ↓ Trachea

✓ Auscultation for Placement → whoosing sound

↳ in both sides.

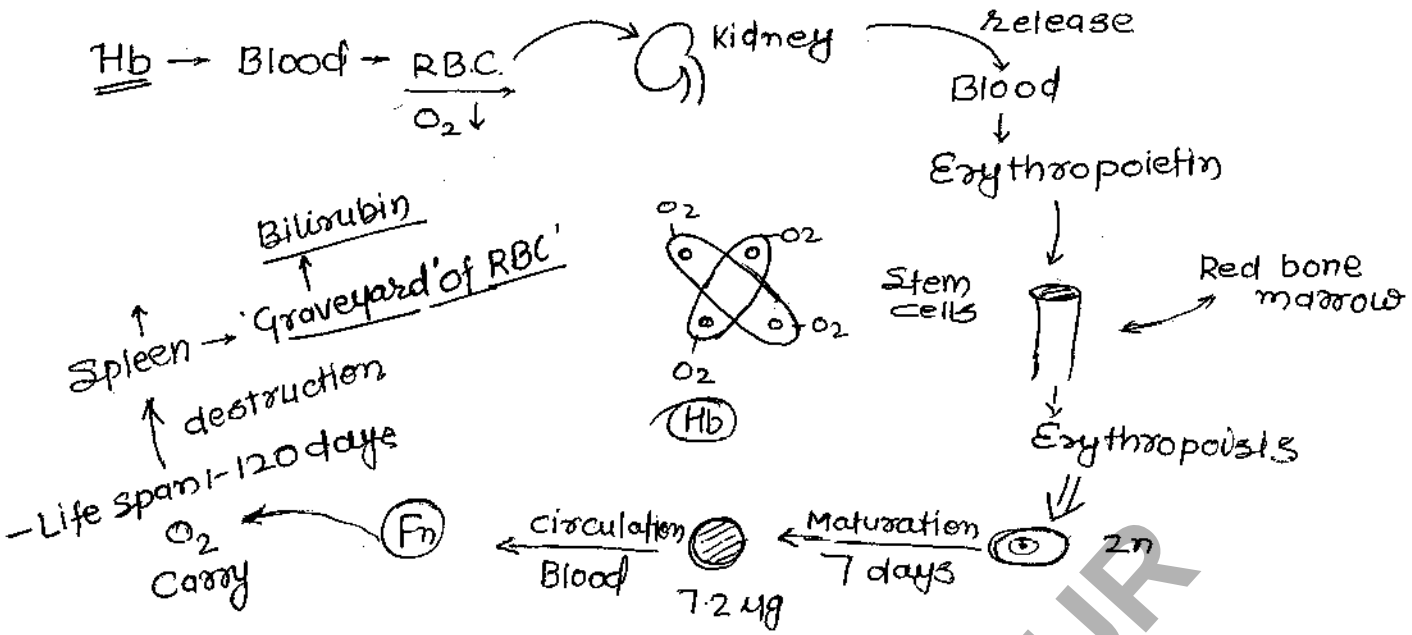
→ Auscul. only in Rt. side → E.T. Tube in left side ✗ Right

Left " ——→ Left side ✗] - wrong placement

↓

* pull back &
* correct.

Oral > Nasal
- secretions are visualised better



Blood Transfusion

- **Definition:-** In this process, blood and their components transfuse to the Pt.

- **Purpose:-** Maintain the blood volume
- **Indication:-** Severe Hemorrhage
- **Steps of B.T.:-** ① Collection
  ② Cross-match - screening
  ③ Infusion.

Q. If Pt. have already B.T. allergy experience, what is the mgmt before B.T.?

Ans. Give diphenhydramine (before 30 min).
↳ Anti-Histamine

*Q M/c infection due to B.T.?
(a) Hep.-B.
(b) Hep.-C
(c) Septicemia - N.O. responsibility.
(d) Iron-overload.

* Hep.C:- Blood transfusion

* Hep.B:- Route- Blood → Blood contact. eg:- Nsg officer - Needle prick
- drug users
- Hemodialysis Pt.

* Vaccination for Healthcare Worker:- Hepatitis-B.

* Blood Components:- 1. R.B.C. (Erythrocyte) → Red coloured
2. W.B.C. (Leucocyte)
3. Platelets (Thrombocyte)
4. Plasma
5. Whole blood.

→ Erythrocyte :- ← 4.5-5.5 million/mm³

• Life span :- 120 days
- 80 days (in child)

Q. Life Span of RBC :-

(a) 80-120 days (c) 80-100 "
(b) 100-120. " (d) 110-130 "

• Indications :- • Anemia
• Severe Hemmorrhage.
• Long time Surgery.

• Specific @ :- Hb level < 8 gm % *
Hb in child < 12 gm %

∴ Hematocrit Vol. / PCV < 30 %.]
{% of RBC in whole blood}

• Normal :-
Adult Male :- 42-52 % → Higher due to Testosterone
" Female :- 37-45 %
Average :- 44 %

* Anti-Coagulant :- Earlier ACD
→ Now
• CPD (Citrate Phosphate Dextrose)
• 35 days
+ Adenine
↑ storage time
CPD + Adenine (42 days)
binds Ca^{+2} → Coagulation ↓
Preservative → Maintain pH.
provide nutrition → Energy → ↑se life span of RBC.

Q. Fn. of dextrose in stored blood :-
a) Provide nutrition - I
b) " Energy - II
c) ↑se life Span.
d) Preservative

* Storage time :- 35 days / 42 d

* Storage temp :- 2-8°C (in Fridge)
Avg :- 4°C

* Infusion Time:— 2-4 hrs.
  - <2 hrs :- Circular / Cardiac overload
  - >4 hrs :- Septicemia.

↳ Check the effectiveness / +ve effect :- after 4-6 hrs of infusion.
↳ 1 unit RBC → ↑se Hb → 1 gm% **
→ ↑se Hematocrit → 2-3% *

↳ Life span of infused RBC → 50-60 days.

→ Platelets 'Thrombocytes' :- (1.5-4.5 lakh).
- Indication :- Thrombocytopenia
  e.g:- (i) Dengue
  (ii) Blood Cancer
  (iii) Chemotherapy → Suppress Bone marrow
  (iv) Bone marrow Carcinoma
- Function:- Help in clotting.

Q. Platelet Count → 50,000. → Health Education (alc 2 pt coish)
→ Provide Care & Admit
↳ which Nsg action avoid while providing care to a thrombocytopen Pt.
a) Avoid IV inj. → IV Therapy is given in Rx.
b) Avoid IM inj. Rat. → To prevent Hematoma.
c) Avoid Cold Sponge
d) All of above

Q. which instruction give by nurse to a thrombocytopenia Pt.
Ans. → Use soft teeth brush
→ Avoid injury

- Platelet count <20,000 → Emergency Transfuse the platelets.
  ↳ Rat. :- ↑sed risk of Bleeding.

Q. Ist side bleeding in a thrombocytopenia Pt :-
a) Nose bleeding → bcz of Once of Sensitive Cappilaries
b) Internal " → IInd Priority
c) Joint " → Ist site bleed. in Hemophilia Pt.
d) Anywhere "

** Cause of death in dengue Pt. → Internal bleeding

Q. 1st Site bleeding in Dengue Pt :- 'Nose bleeding.'

• 1 Unit Platelets :—

R.D.P. (Random Donor Platelets) • 1 unit → 50-70ml.

↳ Prepared by stored blood.

SDP
- during donation.
- Remaining blood, re-infuse to donor.
- ↳ By cell separator.

S.D.P. → /selective (single donor Platelets)

• 1 unit → 180-240 ml.

→ High powerful

→ 1 unit → 40,000-50000 ↑sc

→ R.D.P. → Low powerful.

1 unit RDP ↑sc the Plat. 8000-10,000

1 unit SDP = 6 Unit RDP

• Positive Effect :- 18-24 hours. → to prevent clotting.

• Storage Temp → Room temp. [22-24°C]

• Storage Instrument → Agitator

• Storage Time → 8-11 day

SDP → 5-7 days (Anti coag.↓)

• Anti-Coagulant → Na Citrate ↓ For better Effect.

• Infusion time :- 15-30 min.

• Blood components remove from Blood ⊃ in 4hrs

* Highly sensitive blood cell (component) during B.T.

For Septicemia ⇓ Platelets ⇓ ∧ Forms clots by adherence

Q. Infusion time of Platelets :-

a) 15-30 min. c) 2-4 hrs.

b) ASAP. d) 1-2 hrs.

Main - Albumin ↑ All Plasma prot. All Clotting Factors] Form in Liver

Liver dis. → • 1st site of Edema :- Periorbital cavity (Adipose tissue)

→ Plasma → other than blood cells.

• Indications :- ↑se Rapid Vol. Blood,
- ↓se Plasma protein →
- ↓se Oncotic pressure
- ↓se Clotting factors

(H/C ↓ Liver failure)

• Osmotic Pres. :- Created by whole blood components

• Oncotic " :- " " Plasma proteins

Plasma

(Prepration)

{1 unit = 200-250 ml}

FFP {Fresh Frozen Plasma}

- Indication
  - all clotting factor def.
  - all plasma protein def.
  - decrease osmotic & oncotic press.
  - In Liver disease
  - Hemophilia-B.
- Storage Temp. → −20°C
- Infusion Time → 1-1½ hr.
- Storage duration → 1 yr
  - ↳ Basically used in 14 days.

C.P.P.

{Cryo~~preser~~ Precipitate Plasma

- Prepare by FFP.
- Indication:-
  - ↓se Factor no.1 (Fibrinogen)
  - ↓se Fact. no.-8.

Classical Hemophilia (75%) ← → Haemophilia-A
- ↓se Fact no XIII
- → (→20°C)
- → 15-30 min / ASAP Emerg.
- → 1 yr.

Q. A N.O. identifies Joint bleeding in a Pt., diagnosed for Hemophili which blood component should be infused:-

(a) FFP → in Hemophilia-B (specific) → due to C.F.IX → Rare

(b) CPP.

(c) Plasma

(d) Whole blood

→ WBC :— fn.:- defence mechanism of Body.

- Indication:- Antibiotic therapy not effective
- 1 unit = 400 ml
- Infusion Time :- 1-2 hr.
- Storage time :- 11-13 days
- Storage Temp :- 2-8°C

→ Whole Blood :- All blood components

· Indication → Severe Hemorrhage
- Long time Surgery

1 unit = 350 ml

300 ml → Blood

50 ml → Anti-coagulant → CPD., CPD + Adenine
(35) (42)

* * → Heparin

· Used on Dr. demand bcz storage time only 6-8 hrs.

· Natural Anti-ccag.

· Used in Child.

(Ref :- bcz citrate cause toxicity in Child

- Ca level in Tetany < 4.5 mg → Cause of Tetany → Hypocalcemia

→ Spasm in Muscles

· Normal :- (8.6 - 10.6)

↓se → Spasm.

Infusion time :- 2-4 hr.
Storage temp :- 2-8°C / 4°C

· Symptoms of Tetany

(1) Chvostak ⇒ Spasm of Facial muscles
(2) Trousseau → Spasm of Forearm (causing B.P)

* Fibrinogen ⟶ Fibrin
'Tight Clotting'

· Blood - Fibrinogen = Serum (Yellow colour)

· Tooth ⟶ Milk
· Eye stored in RL
· other organ in NS

· M/c cancer in Female (Gen) :- Breast Cancer
" " " (Rural) :- Cervical Cancer

→ HPV → Vaccine for Cervical Cancer

· M/c Cancer due to Alcohol :- Tongue / oral

Q. Pt. diagnosed for ~~Genesa~~ Liver dis. & Symptom are Generalised edema which blood component infused?

a) RBC
b) Plasma → FFP
c) Whole blood
d) Platelets

W.B.C

Ag Enters in body
↓
Production of Ab
↓
Ag-Ab Rxn
↓
Ag destroyes the Ab.
↓
↓se Neutrophills.
↓
Neutropenia.
⇓
Start Antibiotic therapy → If not effective
⇓
Neutrophenic Fever *
↓
then Infuse WBC.

* Lymphocytic Immunity :- Maintained by Lymphocytes

T-Lymphocytes
↳ prod. → Bone marrow
↳ Maturation → Thymus Gland.
⇓
'Cellular Immunity'
⇓
• Regulatory Cell → (Ig) regulation
→ T-Helper → CD4
→ T-Killer → CD8
→ T-Suppressor

B-Lymphocytes.
↳ prod :→ Bone marrow
↳ Maturation → ..
⇓
'Humoral Immunity'
⇓
• Production of Antibodies (Ig)

Qualities of Donor :—

1. Age :→ 18-65 yr. & Healthy
2. Weight :→ 45-50 kg (min.)
   ↓ ♀ ♂
3. Hb level :- >12 gm%

Q. Normal Hb level of donor :-
a) 12 b) 12.5. c) 13 d) 14

Q At least, Hb level of donor above Q.
↳ 12.5.

→ Gap b/w Previous & Next blood donation → 3 months / 90 days.

→ SDP :- 1 week → 2 times
1 mnth → 4 times
1 yr → 12 Times.

→ Amount of donor blood ⟶ depend on donor wt.

① 50-60 kg → 350 ml
② 60-70 kg → 400 ml.
③ >70 kg → 450 ml. (max.)

Avg. wt → 70 kg
Normal. ≥70

Q. Normal amount of Blood Donated.?
a) 350 ml b) 400 ml c) 450 ml d) 500 ml
a) 350-400 ml. b) 400-450 ml c) 450-500 d) 500-600 ml.
↓ Max.

Investigation of Infectious diseases 5 disease :

① H.I.V.
② Hepatitis - B & C. ⑤ } Lifetime avoid
③ Malaria → Blood donation avoided for next 5 yr
* ④ Syphilis → STD.
✓ ↳ stored in freeze (2-8°C) → auto-destroyed in 72 hrs. (Bact. (Syphilis))
use after 72 hrs
↓
Bacterial disease

- other diseases T.B., diabetes malietus, Jaundice (Pathological) → asked during History taking
↳ Lifetime avoided

Types of Donor:- 3 types.

1. Desinated donor:→ Self-decided
   This type donor ^ by Pt. e.g:- Family, Friends

   ** → M/c type of donor.

2. Autologous Donor:— Self donate blood by Pt.
   - Rationale:- Reduce Self-Anxiety.
   - Blood donate before 5 days.

3. Blood Salvage:- e.g:- Hemodialysis.
   - during Surgery, Suction the blood & reinfuse.

Q. M/c type of donor in Clinical Practice:-
a) desinated. b) Blood Salvage c) Autologous.

Blood Infusion

Flow Rate → 2-4 hrs.
- Per hour → 85 ~~m~~ - 100 ml/hr.
- Per minute → First 15 min. → Slow blood Transfusion (prevent complications like Hemolysis
  * N.O. stay @ Pt.
    - ↳ 1-2 ml/min
    - ↳ 10-20 drop/min
    - ↳ {Macrodrops} → due to presence of cells
  - → After 15 min → Flow rate ↑se
    - ↳ 2.5-4 ml/min.
    - ↳ 25-40 drop/min.

Q. A N.O. observe B.T. & Flowrate of Transfusion = 40 ml/min. What expectation by N.O.→
a) Septicemia b) Cardiac overload c) Tachycardia d) Bradycardia → (b).

Q. B.T. delay > 4 hr. Possible complication → (a).

Q. What is Septicemia?

Ans. a) Body infection.
b) Blood infection
c) Invasion bact. in blood
d) Invasion of micro-organisms in blood & Growth. (d).

9ts all about Time.

* Procedure:-

Articles:-

1. Cannula :- 18 Gauze → green → I st priority.
20 Gauze → also used

2. BT Set :-
- Filter :- aka 'Murphy chamber'
- BT Set Size :- 10 y
  - 1.2 y → Colloids
  - 0.22 y → I/V Therapy
- → BT Set change ē every unit.

- After every unit inf. ↓ cannula flushed ē NS. ★
- To prevent septicemia
- Central line is Flushed ē Heparin.

3. NS. (Isotonic)

Use → before B.T. & after B.T.

Rat :- Maintain the Patency of Cannula.*

*↳ Only NS is used ē Blood ** → All other solutions/fluids, except NS. must be avoided ē Blood.

4. Spirit :- 70% Isopropyl alcohol.
↳ Clean the site.

* Height of IV Stand → 18-24 Inch. (From Pt's head)

* Site Selection :- Forearm [Adults] & Child also
→ Basalic Vein (I) priority
→ Radial Vein (Mid) (II)

- Neonate :- Umblical cord / Vein → I st Priority
  - Cephanous Vein → II nd priority
    - {Lower Limbs}
    - ↳ in Infants.

→ I/V therapy in Neonates → Scalp Vein*

Ted

After site selection – clean the site
↓
Canulization
↓
Open the Cannula ē N.S.

* Blood Bank transport the blood unit → Single unit (single Pt. blood)
↓
Blood recieve at Nsg. Station
↓
Blood transfusion start ē in 30 min

→ Delay the B.T. / more than 30 min → Blood bag sent back to Blood bank. *

Q. What is the Imp. role of N⊙. when blood recieve, then delay, for >30 min. (b)
a) Store in Freeze
b) Send back to blood bank
c) Keep in Dr. chamber
d) Keep it in Pt. Bed side

⇓

Check the blood bag @ Nsg. Station (By two Registered Nurse)

Q Who is the person at Nsg. Stn. check blood bag after recieving (b)
a) 1 Reg. nurse & 1 Resident Dr
b) 2 Reg nurse
c) 1 Reg nurse & 1 wardboy
d) 1 Reg nurse & 1 Practitioner nurse

⇓

Check IPD no.⊙ (I)

⇓

Check the Expiry date (Check the life span of blood cells) Rath

• also :- Bubbles, Clot, leakage, air
check

⇓

Maintain the Blood Temp ⇒ By Blood Warmer

Before infusion, imp. role of Nurse

↓

Check the Vital Signs of Pt.

↓

→ If Nsg off observes fever

↓

→ Avoid blood bag hang on IV Stand (I)

→ Avoid B.T. (II)

→ Inform the Dr. (III)

Q) What is the imp. role of Nurse, before Inf B.T. start?

A) Check the Vital Sign. →

Imp Q ↓ Before B.T., N.O, check Vital Sign & check • Tachycardia, [105] • Hypotension (110/80) & • Rse RR (30) & • Temp (98.6 F) – Normal finding

Imp role of Nurse :– a) Documentation [Infusion start] (a)

b) Inform the Dr.

c) Blood bag sent to Blood bank

d) Blood bag store at 2-8°C

Q Before B.T. & N.O. check the fever, what is the imp role of nurse?

(a) B.T. start

(b) Blood bag sent to blood bank (III) a/c to condition (d)

© Avoid blood Transfusion (II)

(d) Avoid blood bag hangon IV Stand (I) → Inform the dr.

↓

Inform the dr.

↓

Give dr prescribed med. (PCM)

↳ Fever subside → 30-60 min

↙

• Blood bag send the to blood bank & documentation

Fever subside :– Blood Infusion start :–

↓

• First 15 min → N.O. stay ☆ Pt.

↳ B.T. → Slow :– 1-2 ml/min / 10-20 drop/min

• after 15 min :– Flow :– 2.5-4 ml/min / 25-40 drop/min.

V.V.Imp # Plasma recieve at Nsg. Station :-

- Imp. Role of Nurse

⇓

Melt the ice (In Tap water)

⇓

Plasma melt in 45-90 min.

max. limit ↑

Q. Plasma rcv. at Nsg Stn. then infusion start :- (a) 30 min (c) 90 min
(b) 45 min (d) 120 min

(a) 15-30 min
(b) 30-45 "
(c) 45-90 "
(d) 90-120 "

Complications :-

1. During B.T.
'Immediate'
- Hypocalcemia
- Hemolytic Rxn.
- Hyperkalemia
- Cardiac overload
- Septicemia

2. Delayed complicatio
- Iron Overload
- Hep. B. & C.

#Q. M/C complication of B.T. → 'Hypocalcemia'

- Hypocalcemia :— ↓se Ca^{+2} level
  - Normal Ca level :- 8.6 - 10.6
  - cause :- citrate → bind the Ca^{+2}
    - principal → Dilution. ©

- S/s :- Spasm in muscles ✓
  - → Tetany {< 4.5}
    - ⊕ve Chvostak sign → spasm of facial muscles during Tap the Facial mus. (Cheek)
    - ⊕ve Trosseus sign → Spasm of Forearm. during B.P. (Fingers)

- Nsg Mgmt →
  - I. → Slow the B.T.
  - ⇓
  - II. → Inform the Dr.
  - ⇓
  - Give Dr. Prescribed Medicine (Ca Gluconate) → 1 ml dil in 10 ml N.S. For 100 ml Blood.

Eg:- 250 ml Blood.
↳ Ca Gluconate :- 2.5 ml Ca Gluconate in 25 ml NS.

V.V.imp → • Hemolytic Rxn → 'Anaphylactic Rxn'
↳ Least commen. or 'B.T. Rxn'

- Cause :- Mismatched B.T.
↳ O +ve person rcv. B⊕ Blood
eg :-

Symptoms :-

Local :-
- Allergy (Itching, Redness, ~~Hay~~ Hivies, Urticaria)

Systematic
- Hemaglobinurea (late, classical symp)
- Hypotension (due to Histamine released by mast cells) ↓ 'vasodilation'
- Backpain
- Fever, Headache, nausea, vomiting, chills etc.

Nsg Mgmt ↓ Priority
- 1. Stop B.T. immediately
- 2. Start I.V. line → NS. (To prevent shock)
- 3. Inform the Dr.

↓
Give dr. prescribed medicine (Avil + dexona)
↓ If not effective
Hydrocortisone (steroid)
↳ dose :- 100 mg.

↓↓
Collect the - blood sample
- Urine sample

↓↓
Blood bag sent back to blood bank. (only here the* blood has to be discarded)

↓↓
discard the blood bag by Na Hypochlorite (1%)

↓↓
BT Set sent to Lab.

Q. What is the classical sign of Hemolytic rxn :- (a) Itching → If (b) not given
✓ (b) Hb. urea
(c) Allergy
(d) Havies.

Q. What is the I^st Nsg priority in Hemolytic Rxn.:—

a) Stop the B.T. & inform the Dr. → II^nd Priority

b) Stop. B.T & Start IV line

c) Give Avil + dexona.

d) documentation

Vit. D → absp. of Ca

- **Hyperkalemia :—** ↑se level of K^+

gmp.

Cause :- Old blood transfusion

↓

Blood cell destroyes

↓

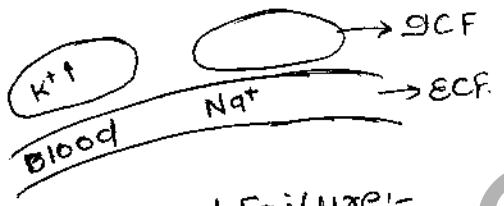
↑se K^+ in Plasma

- Normal K^+ level :- 3.5-5.1 meq/L.
- Na^+ → 135-145 meq/L.
- Most abdudant electrolyte/ Cation ⊕ in E.C.F :- Na^+
- Most abd. electroglyte in GCF → K^+

- S/S → Arrythmia
  - ↑se Peristaltic movement
  - ↑se Abdomen cramps
  - Cause of diarrhoea.

- Nsg Mgmt → 1. Slow the B.T.
  ↓
  2. Inform the Dr.
  ↓
  3. Give Dr. Prescribed medicine
  → Kyxalate (K^+ Binder)
  ↳ Oral / Enema.

GCF :- K^+ → 135-145 meq/L
Na^+ → 3.5-4.5 meq/L.



* Fresh blood infuse in - Cardiac & Renal Failure Pt
  ↓
  * Avoid old Blood

In Renal Failure :-

All Electrolyte ↑se except. Ca^+ & Na^+.

Ca^+ ↓ due to Vita. D def.
↓
'Hypocalcemia'
→ Richest source of Vit.D.
↳ Fish (Fish/cod Liver oil)

Na^+ ↓ → Hyponatremia
↓
due to Hypervolemia
↓
dilution
↓
conc. of Na^+ ↓

• Cardiac Overload :-

- Cause :- Rapid transfusion. (<2hr)
- S/s. :- Dyspnea
  - cough.
  - Chest pain.

→ Check the Jugular Vein distention. → by elevation of head to 10° by pillow.

→ Pulmonary edema.

→ Bounding pulse

Nsg Mgmt
① Slow the transfusion.
② Maintain the airway → Give Fowler position
(Rat :- to relieve pulmonary edema.) #
↓
dyspnea relieved.
③ Inform the Dr.
④ Give Dr. prescribed medicine → diuretics.

V.V Imp.

• Iron Overload :-

M/C anemia worldwide :-
- Iron def. anemia

- Cause :- Recurrent B.T.
  e.g:- RBC.
  • Rat. → max. storage of iron → RBC (2/3rd %)

#Iron
- S/s → constipation → M/C complication of iron overload (↑se water absp.)
  ↳ Adv. to ↑se fluid intake
  → Nausea
  → Vomiting
  → Irritation
  → Headache

- Nsg Mgmt :- ① Slow the transfusion
  ② Inform the Dr.
  ③ Give dr. prescribed medicine
  ↳ Give desferoxamine
  ↓
  'Red colour urine' in ↳ documentation

• check the effectiveness of desferoxamine → early morning (1st void)
↳ Subside (Red colour urine) in 2-3 void.

Q. A Pt. complain Red colour urine after starting desferoxamine. Imp role of Nurse?

a) Stop desferoxamine
b) Inform the dr.
c) documentation → Normal finding → Subside after 2-3 void.
d) ↓se dose of desferoxamine

Red / orange colour urine also seen after starting Rifampacin. (T.B.) → Subside after 2-3 void.

Rifampacin inhibits at metabolism of OCP.

M/C anemia (in any age grp./all over) → Iron def. anemia.
↳ Max. iron stored in RBC e.g:- chronic hamorrhage, accidents etc

• Septicemia → Cause → delayed B.T.
S/S → Fever, headache, nause, vomiting (infection symp.)

Nsg. mgmt → Stop the B.T.
→ Inform the Dr.
→ Start Antibiotic after Dr. Prescription
→ Take Blood & Urine Sample
→ Blood bag send to Blood bank (For discard by 1% NaHypochlo

* Massive Blood Transfusion:-

• Indication:- Severe Hemorrhage → Shock.
• Massive T.F → Regular 24 hours.
• Components for Massive B.T.:- R.B.C. : Platelets : Plasma 1 : 1 : 1
↳ starts c whole Blood for 2-3 hrs — then.
• complications:- • Hypothermia → M/C complication
• Metabolic alkalosis.
• & Rest – Hypocalcemia & Hypercoagulopathy.
– Hyperkalemia
– Iron overload
– Cardiac overload
– Septicemia.

due to compensation (liver) during Hemorrhage ⇓ Hypercoagulopathy.

Hypercoagulopathy ↓ 'Cause of death'

Q. Death due to Hypothermia → Reason → Vasoconstriction → Cardiac arrest.

Q. Accidently cold Blood transfused → can cause Cardiac arrest.

↳ Maintain by Blood Warmer

July, 20, 2022.

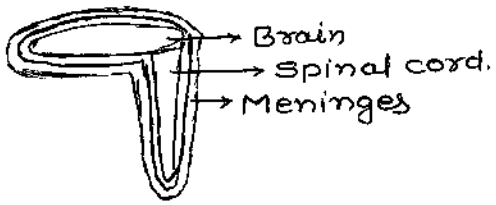
* Sample Collection

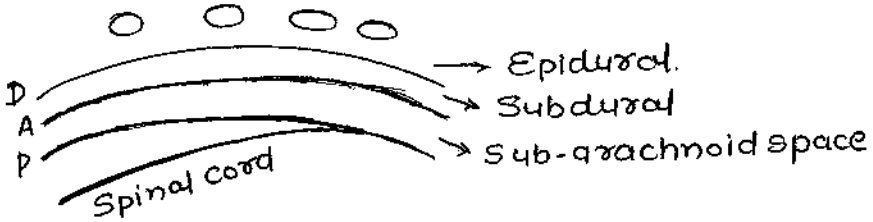
C.S.F. Sample (Lumbar Puncture)

aka 'Spinal Tap'

In this procedure, needle insert in Sub-arachnoid space (b/w. A. & P.) ⇓ Max. Flow of C.S.F.

C.S.F. circulate in Meninges.





- **Purpose** :- ① C.S.F. analysis.
  ② Check the C.S.F. Pressure.
  ③ General Anesthesia for lower extremities Surgery.
  ④ Check the Structure of Spinal Cord.

- **Indications** → 1. Meningitis.
  2. Myliography (check the structure of Spinal Cord)
  3. Pot's disease (Extra-pulmonary T.B.)

*Q. First organ affected in Extrapulmonary T.B. → Vertebral bone ⇓ 'Pott's disease'.

**Q. I organ affect in Female by E.P.T.B.? → Fallopian Tube

4. Ray's Syndrome → M/c in child.

- Cause :- Aspirin ⇓ affect the mitochondria of Liver ⇓ Level of ammonia ↑ ⇓ Cross B.B.Br. ⇓ 'Hepatic Encephalopathy' ⇓ 'Seizures in child'

Ammonia ← Liver → Urea → Waste of Protein

→ In Ray's Syndrome/ Any Liver disease ⇓ diet Modification ⇓ 'Low Protein diet'.

5. Neuron disease ✓
6. Brain Tumour ✓

* Q. I st organ affected by Gen. Anesthesia given through Lumbar Puncture
→ Brain.

- Contra-Indications →

① ↑se ICP
⇓
Rat. :- To prevent 'Cerebral Hernia'.

Q. Accidentally . C.S.F. sample, collected in ↑se ICP through LP. Complication arised?
↳ Cerebral Hernia ['suddenly ↓se CSF Pressure]

- S/S of ↑se ICP :-
  - Adult :- ① Altered Consciousness (GCS)
    ② Systolic BP ↑se → Classical Symptom. and Pulse pressure ⇒ Wide
    ③ Slow RR & HR.
  - Child : → Same as adult
  - Neonate/Infant :- High pitch cry. —
    - Bulging Fontanalles. —

Q. A Dr. prescription for C.S.F. Sample collect in ↑se ICP Pt. N.O. prepration of procedure?
(a) LP. (b) Spinal tap (c) Both (a) & (b) (d) Cisternal puncture

↳ C.S.F. collected from 'Cisternal Megna.'
→ Cisternal puncture.
→ Needle insert just below the occipital bone / Sub-occipital area

- Perform the Procedure :- ① Right Pt. Identification
  ② Check the consent
  ③ ↑se communication if anxiety ☺

Articles :-

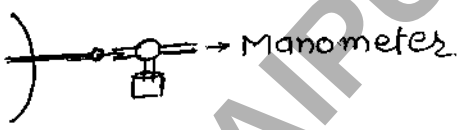
1. L.P. Needle (16 Gauge)
   ⇓
   Replaced by ⇒ Spinal Needle (22-25G.)
   - Adult.
   - Child.

2. Beta-dine (10% Povido-Iodine)
   - clean the site. / Paint the site.
     - complete flank region.

3. Sample bottles :- (3) → Investigations - (i) Cytological / histological Examⁿ.
   (ii) Serological Examⁿ
   (iii) other (Bacterial / Viral etc.)

4. Manometer :- check the pressure of C.S.F.

5. 3-way adaptor →



6. Gauze piece.

#7. Local anesthesia ⇒ 2% Xylocaine injectible.

Procedure ⇒

Position → Give lateral position & Knee & Head Flexed inside
C shaped & Pillow apply under the head.
↓
Maintain the gravity / Posture

→ Rat.-t se the vertebral space

Site Selection →

- Gn adult ⇒ Level of Spinal cord ⇒ L_1
  - LP ⇒ L_2-L_5.
  - M/c in adult :- L_3-L_4 (Largest space)
- Gn Child ⇒ Level of Spinal cord :- L_3.
  - LP ⇒ L_4-L_5

Q. M/C site for LP in clinical practice?

(a) L_2-L_3

(b) L_3-L_4

(c) L_4-L_5 → used in both adult & child.

(d) L_3-L_5

- amount of sample ⇒ 6-10ml

→ Clean the site ⇒ Flank / Lumbar region complete

⇓

→ Insert the needle in Sub-arachnoid space

⇓

Remove stylet wire

⇓

Attach 3-way adaptor.

⇓

→ During C.S.F. withdrawl, check the C.S.F. Pressure

⇒ Normal CSF Pressure ⇒ 5-15 mmHg ✓

or 60-180 mmH_2O ✓

Q. During procedure, C.S.F. Pressure suddenly reduced

↳ Stop the procedure.

⇒ During C.S.F withdrawl ⇒ Stop. ⇒ Allow Pt. For Slightly Cough (vibration)

Q During C.S.F. collection, Sample withdrawl stop., imp. role of Healthcare worker

(a) Aspirate the CSF

(b) Change the position

(c) Allow for slight cough

(d) Other Site Selection

⇓

After Sample collection.

⇓

Remove the needle

⇓

Apply the pressure

⇓

Apply dressing

c dry gauze piece (Rat ⇒ Check the leakage)

After procedure :—

Position :— Flat position or (Give supine post^{t} (accurate) & pillow apply (# prevent leakage) under the puncture site).

- Rat :- Prevent Headache (due to ↓sed flow of C.S.F. at Brain side)

Pillow avoid ⇒ Give flat position.
(12-24 hr) (at least 3-5 hrs)

Q. If Pt. complaint for headache after L.P. what is the Imp. Role of # Nurse :-
(a) Inform the Dr. → IInd Nsg priority.
(b) Give lateral position.
✓(c) Give trandelberg pos. → ↑se flow of C.S.F.
(d) Start I/V therapy.

Headache in Post-LP Pt., then imp. Role of Nurse :-
① Trendleberg pos.
② Inform the Dr.
③ ↑se fluid intake
④ Start I/v. therapy.

Q. What is the ~~imp. role of Nurse~~ Effective mgmt of Headache in a Post-LP Pt. :-
(a) Trendleberg pos.
✓(b) Start I/V therapy
(c) ↑se fluid intake
(d) documentation.

Q. Which instruction give by Nurse to a Post LP Pt., that complaint for headache :-
(a) Use dim light in Room
(b) Avoid Caffiene product
(c) ↑se fluid intake
✓(d) All of above.

Q. A Post LP Pt, complaints wet at puncture site, what is the I Nsg. priority :-

(a) Inform the Dr.

(b) Check the site (II nd)

(c) Change the dressing & apply pillow (III rd) under puncture site

(d) give trendleberg pos. → in case of Headache

Analysis :-

* Normal Finding :-

1. Colour :- colourless, transperent
2. pH :- slightly alkaline (7.32)
3. Odour :- Odourless
4. Blood cell → W.B.C. → ⊕nt.
   → RBC, Platelets → ⊖nt
5. Glucose → ⊕nt → 40-60 mg/dl.
   Protein → ⊕nt → 35-50 mg/dl.
   Insulin → ⊕nt
6. Storage temp. :- *Room Temp. (22-24°C) → upto 6 hrs.
   ↳ Investigation delay (>6 hr.) → Store in Freeze (2-8°C).
   ↳ use in 24 hrs. → after 24 hr ↳ discard.
7. Investigation :-
   ↳ Serological Exam^{n} → Storage temp. ⇒ (-20°C) for 24 hours

Abnormal Finding :-

Colour :-

① Red colour / Pink colour :- RBC ⊕nt
↳ Cerebral Haemorrhage

② Turbid colour / Cloudy colour :- due to infection.

Q. A Pt. Δsed for bacterial meningitis, colour of C.S.F.:-

↳ Turbid colour

Q. if Viral meningitis, colour of C.S.F. ⇒ Turbid colour.

* Any infection in meninges → Turbid coloured C.S.F. (cloudy)

Change the characteristics of C.S.F. :-

1. Bacterial Infection :-
   - ↓se Glucose
   - No change in protein (↑se ratio of protein)
   - ↑se Neutrophils.

2. Viral Infection :-
   - ↕se Protein
   - No change in Glucose (May ↑se)
   - ↑se Lymphocytes

Pott's disease → Glucose :- ↓se., No change in Protein, ↑se Lymphocytes, ↑se neutrophils.

Q. A Pt. Δed for bacterial meningitis., change in C.S.F. characters

(a) ↑se Glucose & ↑ Protein level

(b) ↓se Glucose & ↑ Neutrophils.

(c) ↓ Glucose & ↓ Protein

(d) ↓ Glucose & ↓ Neutrophils., ↑ Lymphocytes.

Q. A Pt. Δed for Pott's disease, change in C.S.F :-

(a) ↓ glucose, (b) ↑se neutrophils (c) ↑ Lymphocytes. (d) all

Brain tumor :- ↑se protein level.

Complications:-

1. Headache → M/c complication of L.P.

Cause → ↓se circulation in Brain side or accidently pillow apply under head.

Nsg Mgmt :- a/c to priority :- ① Give trendelberg position
② Inform Dr.
③ ↑se fluid intake
④ Start I/v therapy ⇒ Effective Mgmt.

2. C.S.F. Leakage :-

Cause :- Improper pressure at puncture site

Nsg. priority → :- ① Check the puncture site
② Change the dressing.
③ Pillow apply under puncture site
④ Give trendelberg position.

Complication :- Shock. → Brain dead.

3. Pain :- due to site puncture.

Nsg mgmt → ① Give cold application
② Give acetamenophen after Dr. Prescription.
↳ M/c used analgesic in clinical practice. (Pain mgmt).

Sputum Sample

→ Mucus collect From Resp. Tract.

Instructions to Pt. →

- Sputum sample collect in Early Morning.

* In all disease conditions, Sputum sample collected in Early morning, Except T.B.

↳ First Sample in T.B. is collected → on the spot.

IInd " " " ⇒ Early morning. ⇒ 2 sputum sample, 2 week cough.#

Q. Confirmative Exam" of T.B. ⇒ Sputum microscopy *

- Sputum sample collect in Sterile Plastic container.
- Avoid teeth-brush & any anti-septic solution for mouth wash before Sputum sample collection.

✓ Allow only for Plain water.

Q. Sputum sample collect. :- (a) Early morning.

(b) on the spot → First sample collected in T.B.

(c) Late morning.

✓(d) Awake from bed.

Q If Pt. unable to give Sputum sample (Sputum not expelled), which instruction given to Pt.?

↳ Take deep breath & Hold for few seconds.* [Ist priority]

↳ Take Hot Steam. [Rat :- To loose the mucus] [IInd]

↳ Give chest physiotherapy (IIIrd)

Q. Sputum sample collect in Pharyngitis. ⇒ Swab sample / throat Sample

Analysis →

*Normal Characteristics →

① Colour → colourless. ✓

② Odour → odourless ✓

③ pH → Slightly alkaline ✓

*④ Sample sent to lab ⇒ ASAP.

⑤ Storage temp. ⇒ Room temp. (22-24°C)

⑥ After 6 hrs. → 2-8°C → upto 24 hrs. after that → discard.

⇒ Preservating agent → Na Citrate ✓ → Maintain Homeostasis.

* Colour of Sputum (Abnormal Finding) →

*

1. Black Colour Sputum →

⊕ in (1) Coal mine worker
(2) Chainsmoker.

* Black colour sputum due to presence of Carbon

2.** Rusty colour Sputum →

⊕ in Pneumonia

3. Pink colour Sputum →

Blood ∈ Sputum. / Red colour

e.g:- T.B., Asthma, Allergy, severe cough.

4. Yellow colour →

Pus ∈ Sputum.

5. Green Colour →

→ unknown cause

but ⊕ In (maybe), T.B, COPD, Bronchio Actesis.

6. Brown Colour →

→ Necrosis of the Lungs

• Asthma :- presence of Eosinophills in Sputum.
↳ Allergic.

Stool Sample Collection & Analysis →

• Instructions to Pt :-
→ Stool Sample collect in Early Morning → Desire of defecation
→ Sample collect in sterile Plastic container.
→* Stop the Antibiotic therapy → Last night dose.
→* Stop Iron therapy → before 5-7 days*
Rat. ⇒ Iron changes the appearance/colour of Stool. ⇒ Black colour stool.

• Purpose
1. Diagnostic Purpose / Infection :-
Q. A Dr. Prescription for parasite growth Examination of stool, which instruction given to Pt.?
↳ Forcefully expulsion of Stool.*

• Analysis →
• Normal Findings →
⇒ Colour :- dark brown colour → due to Stercobillinogen.
⇒ Odour → Pungent Smell.
⇒ pH → depends on diet ⇒ Normally ⇒ acidic (cor, CHOis ↑ in normal diet.)
A/c to diet ⇒ (i) High Carbohydrate diet ⇒ Acidic
(ii) High Protein diet ⇒ alkaline
(iii) High Fat diet ⇒ no change in pH
↳ Change the appearance of Stool.
⇓
Frothy like Stool.
⇓
also ⊕ in Stetorohhea*

⇒ Amount of Stool ⇒ 50 gm. [Normal Stool Pass out ⇒ 200 gm]

⇒ Storage temp. ⇒ Room temp. ⇒ 6 hrs

↳ If investigation delayed ⇒ after 6 hrs ⇒ discard the Sample.

* Normal colour of Stool in Neonate ⇒ Yellowish Colour.

Rat. ⇒ Rapid Peristaltic movement.

- Child → Same as adults.

• Abnormal findings:-

1. Green Colour ⇒ Meconeum (I^st Stool of Neonate)

2.* Tarry Black Colour Stool ⇒ Upper G.I. bleeding.
- Gastritis
- Peptic ulcer

3.* Malena (Black Colour stool) ⇒ Old blood ∈ Stool
↳ Lower G.I / Colon bleeding.
↳ Iron therapy Pt.

4.* Fresh blood ∈ Stool (Hematochesia) → eg:- Piles, Hemorrhoids
→ Blood on surface of Stool.
(Anal bleeding)

Rice-watery diarrhea ⇒ Cholera (∈
Pea-Soup diarrhoea ⇒ Typhoid → Enteric fever

Ribbon like stool ⇒ Hirschprung disease
Jelly like Stool ⇒ ~~Redcurrant like~~ Intussuception
⇓
Overlapping of G.I.

Clay colour Stool ⇒ bile abst in Stool. / bile duct obstruction
e.g. Jaundice
↳ also ⊕ in Chronic Alcoholic Pt.

- Dysentry ⇒ Blood & mucus ∈ stool.
- White colour stool ⇒ Barium Enema → Anal
  Barium Meal → oral
  ] – contrast medium.
- Watery diarrhoea ⇒ Celiac Crisis.

Q. A Dr. Prescription for daily stool sample collection in a Chronic Bowel disease. Examination of stool.=?

(a) Bacterial Culture
(b) Parasite Growth
(c) Occult blood → 'Quick test' **
(d) Microbes

Urine Sample Collection

* Methods of Urine Sample :-
1. Random method.
2. Mid Stream Urine Sample
3. Time specific Urine sample
4. Catheter method.
5. Suprapubic method.

1. Random Method ⇒ Urine sample collected any time in a day.
   - No need any instruction to patient.
   - This sample no reliable.

Use ⇒ Micro-scopic examination, Routine
   = M/c use in clinical practice.
   = Not used for culture.

2. Time Specific Urine Sample (24 hrs Urine Sample) :-
   - Sample collect in IPD / Admit Pt.
   E.g. 8 AM to next day 8.A.M.

Imp. role of Nurse before Sample Collection :-
   - First Sample discard
   - Empty the Urinary bladder*

Indications :-
   * Check the protein urea (Protein level)
   - Nephrotic Syndrome.
   - Glomerulonephritis.
   - Pre-Eclampsia
   - Eclampsia
   - Tumor in Adrenal medulla.

Renal Failure ⇒ Examination ⇒

1. Serum Creatinine ⇒ 0.6 - 1.3 mg/dl
2. BUN ⇒ 8 - 25 mg/dl.
3. Uric acid ⇒ 2.5 - 8 mg/dl.

⇒ During 24 hour urine sample, collect every urine sample store and every sample seprately store

Q. A N.O. collect the 24 hour urine sample., the sampl amount :-

I st sample ⇒ 300 ml
II nd " ⇒ 400 ml
III rd " ⇒ 500 ml
IV th " ⇒ 400 ml
V th " ⇒ 300 ml.

Send the amount to the lab ⇒ 1600 ml
(Total amount - 1st sample discard)

Q. A N.O. collect the 24 hr. urine sample in a renal failure
* Pt. for diagnosis of S. Creat., BUN, Uric acid, which instruction given to Pt.

(A) Yes fluid intake
(B) ↓ Fluid intake
(C) Restrict all the activity → Coz. GFR ↑se
Cret ↑, BUN ↑, Uric acid ↑
(D) Allow for dance

3. Mid Stream Urine Sample ⇒
- First and last stream discard & collect midstream.
- Mid stream sample collect in only adult Conscious Pt.
- Avoid in mentally Pt. & Child.

→ Use ⇒ [gn culture*]

→ Give instructions to Pt:-

1. Sample collect in early morning (Awake From bed)
2. Avoid Alcohol & Caffine Product.
   Rat → coz suppress the Hypothalamus & change the conc. of urine
3. Instruction for male :- Clean the Glant of Penis. (wet Gauze Piece)
4. Instruction For Female :- Seprate the labia majora & Labia minora & don't touch Container to Vagina.
   - And wash the Vestibules.

Q. Mid Stream Sample collect ⇒
(a) Any time in a day (b) Early morning
(c) Awake from bed (d) Night time

Q. Sample collected for culture ⇒ Mid stream Sample

4. Catheter Method ⇒

Indications :-
① Unconscious. Pt.
② Paralysis Pt.
③ Old Age Pt.
④ Involuntary urine passout
⑤ Infant / Neonate
⑥ Female during menstrual cycle

Types of Catheter for Urine Sample :- 2 Types.

1. Condom Catheter → use in Neonate, Infant, old age, drooling of Urine.
2. Foley's Catheter
   ↳ Rest :- unconscious Pt.

Procedure ⇒ 1. Clamp the Catheter for 20 minutes.
Rat. → Urine collect in bladder.

2. Clean the site / Port of Catheter by Beta-dine*
3. Sample collect by Needle Aspirate technique from Port of Catheter.

gmp.*
5. Supra-Pubic Method ⇒ aka 'Most Sterile Sample' / Less contaminated sample (direct From bladder)

⇒ Use :- For Culture*

#Indications:- ⇒ obstruction in Urethra.
⇒ UTI, Inflamation in urethra
⇒ Tumor

Q. A Dr. prescription for Urine Sample collect in unconscious old age Pt. for Culture*. That Sample must be most sterile* / less contaminated.*
Method used for Sample:-
(a) Mid-stream. (b) Catheter
(c) Supra-pubic (d) Random method.

Q. M/c Urine Sample in Clinical Practice & No need of any instruction.
(a) Random method.
(b) Catheter "
(c) Mid-stream
(d) Supra-pubic "

Q. Urine Sample for culture in above options:- Mid-stream.

Amount of Sample ⇒

→ For Culture ⇒ 10 ml ✓

→ Other Exam^{n} ⇒ 100-120 ml *

Preservative agent :- 1-2% ~~Formaldehyde~~ Boric acid ✓

Q. What is the chemical used for preserve the urine sample

(i) 1-2% Boric acid → Ist

(ii) HCl → IInd

(iii) Formalin → IIIrd

(iv) CPD.

Storage temp. ⇒ ① Room temp. (22-24°C) ⇒ For 6 hrs.

↓

• If Investigation delay (>6 hrs) ⇒ Store in Freeze (2-8°C)

→ Sample sent to Lab ⇒ ASAP.

Analysis ⇒

1. Physical Exam^{n} ↓

* Normal Finding of Urine :-

⇒ Colour ⇒ Pale-Yellow colour (due to presence of Urobillinogen) or Umber colour.

⇒ Odour ⇒ Aromatic or as like Ammonia.

⇒ pH ⇒ Slightly acidic (6.4) alkaline in cystitis.

Q. Normal pH of Urine :-

(a) 5.4 (b) 6.4 (c) 6 (d) 7.32 → nearest to neutral ⇒ Slightly acidic

⇒ Normal Urine Passout ⇒ 1000-2000 ml (Range)

avg. ⇒ 1500 ml.

2. Chemical Exam^{n}

• ⇒ **Specific gravity of Urine ⇒

Normal ⇒ 1.010 - 1.030 ✓

⇒ 1.016 - 1.022 II

⇒ 1.016 - 1.025 II

* Specific gravity in DM Pt. :- ↑ (1.060)

* In Diabetes Incipidus Pt :- ↓ (1.002)

Child :- 1.008 - 1.015

Diagnosis

* Specific Gravity depend on Fluid conc. ⇒ conc. ↑ ⇒ S.G. ↑
⇒ conc ↓ ⇒ S.G. ↓
Fluid

Q. A Person c severe diarrhea & Vomiting ⇒
S.G. ↑es.

* Dehydration ⇒ S.G. ↑
* Hemorrhage ⇒ S.G. ↑
* I/V Therapy ⇒ ↓
* ↑ Fluid intake ⇒ SG. ↓se

Q. In all Polyurea condition, SG of urine ↕se except.
(a) DM (b) DI (c) I/V therapy (d) Pt. on lasix

• Abnormal Findings :-

* Colour ⇒ ① Colourless urine ⇒ ↑se Fluid intake,
- I/V Therapy

② Smoky-brown colour urine ⇒ bile pigment in urine.
③ or Brown colour ⇒ only bile ⊕nt.
④ Milky colour urine ⇒ / White colour
* Chyle ⊕nt in Urine
↳ Lymphatic Fluid in Intestina
area due to chyle leakage i
Kidney.

⑤ Pepper like Grain :- Uric acid ↑se
eg :- Gout
⇓
. diet modification ⇒ Stop the
Purine protein (Red meat)
⇓
Max. sources
Purine protein

Uric acid is waste
of Purine protein.

* Flucolent of urine ⇒ Pus / Mucus ⊕nt in urine
↳ cloudy colour deposition ⇒ upper surface
of urine ⇒ Mucus ⊕nt
↳ cloudy colour dep. ⇒ bottom Surface
⇓
Pus ⊕nt.

* pH:- alkaline → Cystitis.*
↳ due to ~~dilati~~ dilution of urine by mucus.
In case of Inflammation

* Smell/Odour ⇒ Fruity like / Sweet like ⇒ ① Presence of Ketone bodies in body
↓
② also in Starvation
Gluconeogenesis.
Fat → Glucose
waste of Fat metabolism
'Metabolic Acidosis'

Q A Pt. Adm for Ketone bodies in urine. Glucose level >300mg/dl
Rx of Choice? (For excretion of Ketone body) cells ⇒ inactive at this level.
(a) N.S. → I^st priority ⇒ Symptomatic Rx
(b) I/V Insulin.
(c) Insulin c 5% dextrose ⇒ (II^nd) :- when glucose↓ < 300 mg
(d) N.S. + Insulin.

2. Chemical Examination:-

(i) Glucose Exam^n in Urine ⇒
Chem. used ⇒ Benedict Sol^n ⇒ 'Benedict test'
aka ⇒ 'Fehling test.

Procedure:-
⇒ 5 ml. Benedict sol^n filled in test tube.
↓
Boil the sol^n ⇒ Rat:- To check the purity of Chem.
↓
Blue colour ⇒ Pure sol^n
↓
Add urine drop-by-drop. (only 8 drops)*
↓
If Colour remain Blue → Glucose ⊖nt.
↓
* If Colour Changes ⇒ Glucose ⊕nt.
# 1% Glucose ⇒ Green Colour
# 2% " ⇒ Green c Yellow deposition
# 3-4% " ⇒ Orange
# 5% " ⇒ Brick-Red Colour

* In Early morning, before breakfast (Fasting)

Glucose > 170 mg/dl. ⇒ kidney start Filter glucose / Glucose ⊕nt in Urine

2. Protein Examination in Urine:-

↳ "Albumin Exam" 2 methods.

Hot Test

• Chem :- 5% Acetic acid

⇒ 3/4th Test tube fill ē Urine

⇓

Boil the Urine

+

Add 8 drop of Acetic acid

Colour ⇓ 'Cloudy Colour' ⇓ Maybe Protein & maybe Phosphate ⊕nt

If colour changes ⇓ Phosphate ⊕nt

If colour remain Unchanged / Cloudy ⇓ Protein ⊕nt

Cold Test

3% Nitric acid.

⇒ 3/4th level ⇒ Urine in test tube + 3% Nitric acid ⇓ Nitric acid + Albumin ⇓ White colour ring ⊕nt in Test tube ⇓ Protein ⊕nt.

3. Ketone Bodies ⊕nt in Urine :- In Hyperglycemia

* Rhomberg test ⇓ To check balance in alcoholic person. Stand still ē eyes closed for 60sec

* Bithesmal Calorie test.

Rother Test *

Chem :- ① Liq. ammonia (main) (ammonium hydroxide)

② 1 Crystal of ammonium Sulfat

③ 1 Crystal of Na Pruside.

*Procedure ⇒ Urine (5ml) Fill in test tube ⇓ Add 1 Crystal of ammoni (20gm) Sulfate + 1 Crystal of Na Pruside (0.75gm) ⇓ Shake / Mix all conten ⇓ Add liq. Ammonia (1-2ml) drop to drop ⇓ Colour ⇒ Violet * (Purple)

Rothera's Powder Ketone Body ⊕nt.

④ Bile Pigment Examination in Urine :- Smoky Brown Colour
Smith Test

* Bile Pigment ⇒ Smith Test
* Bile Salt ⇒ Hey's Test

• Chem ⇒ Tincture Iodine
⇓ (alcoholic nature)

add Tincture iodine in Urine
⇓
Colour change
⇓
Green colour ⇒ ⊕ of Bile Pigment.
(in Jaundice)

⑤ Bile Salt Examination :-
↳ Seen in Cholilithiasis.
Test ⇒ Hey's Test
Chem ⇒ Sulfer powder
⇓
when added in Urine ⇒ Sulfer powder shrink in Bottom of Test Tube.
⇓
Bile Salt ⊕nt

1. Feling / Benedic Test ⇒ Glucose
2. Rother Test ⇒ ketone bodies.

Paracentesis.

Definition ⇒ In this Procedure, Fluid remove from peritoneal cavity.

Purpose ⇒ 1. Relieve the Constipation.
2. Relieve dyspnea.
3. Diagnostic Purpose
4. Relieve abdominal organs' Pressure #

* Largest serous memb ⇓ Peritoneal Cavity.

* Normal amnt. of Fluid ⇒ 15-20 ml.

Indications ⇓
1. Liver disease.
2. Ascites :- Excv. fluid collect in Peritoneal cavity
3. Blood collect in P.C. ⇒ Hemoperitoneum.
4. Water ⊕nt in P.C. ⇒ Hydroperitoneum.
5. Appendicitis Rupture.
6. Peritoneal dialysis (bcz of presence of large no. of network of capillaries around PC)

Procedure
→ Right Pt identification
→ Check the Consent.
→ Articles :- ① Needle ⇒ 14-16 Gr.
② Betadine 10% ⇒ Povido Godine.
↳ complete abdomen cavity ← Paint the site ← Clean the site for Paracentesis ⇓ Just below nipple to Pelvic cavity.* (or breast in ♀)
③ Dry Gauge Piece
④ Sample Container
⑤ Paracentesis Tube.
⑥ 2% xylocaine Injectable ⇒ Zig-Zag ⇒ local Anesthesia.

Revise

* Prepare the Pt. before Surgery:-

① Remove the hairs before 30 mins ⊂ Trimmer.

② Check the vital Signs.

③ Empty the Urinary bladder. *

* Q What is the imp. role of nurse before Paracentesis?

(a) Check Vital Signs

(b) Prepare the Site

(c) Empty the Urinary bladder

(d) Give opoids ↓

Rat. ⇒ Prevent Rupture of Urinary bladder.

when filled ⇒ extends to peritoneal Cavity

Procedure

Position :- Fowler position and

Keep Pt. at Edge of bed.

* 2nd option :- Semi-Fowler.

Rat :- Maintain the gravity ⇒ Fluid settled a in lower site.

Site Selection ⇒ b/w umblicus & Symphysis pubis.

or 1 inch below the umblicus.

or 2 finger " "

⇒ if not in option ⇒ 2/3rd along the umblicus (anterior iliac umblicus)

* Needle insert in cavity ⇒ 1.5 inch

⇓

Z traction Method

* Keep container below the abdomen cavity

Q** During Paracentesis, what is the imp role of nurse?

(i) Check Vital Sign.

(ii) Check Abdominal girth

(iii) Check BP.

(iv) Check Urine output.

Amount of Peritoneal fluid ⇒ For Sample ⇒ 20-30 ml.
⇒ For Therapeutic purpose ⇒ 2000 ml at a time

* Repeat the procedure (if needed) after 8 hrs.

Q Accidently Paracentesis fluid remove > 2000 ml. (around 3L) what Expectation by Nurse?
(a) Nurological SHOCK
(b) Vascular Collapse
(c) HTN.
(d) Bradycasdia

After Procedure ⇒ Apply Tight dressing. (Rat:- To prevent leakage)
↳ also apply abdomen binder.

*Q. After Paracentesis, Position Provided =? Semi Fowler Position
⇓
To relieve dyspnea,* maintain airway.!!

Imp. Role of Nurse (post-Paracentesis)
1. CHECK the Vital Signs. (every 30 mins.)
⇓
Mainly BP**
2. Check the colour of Fluid.
3. Check the abdomen girth.
4. Check the comfort of Pt.
5. Check the effect of Paracentesis.

Q. Check the effectiveness of Paracentesis:-
(a) Relieve the dyspnea.
(b) ↓ abdomen girth
(c) ↓ Urine output.
(d) ↑ Peristatsis movement.

*[Rat. :- ↓se press. on diaphragm.]**

Colour of Fluid ⇓

* Normal ⇒ colourless.
* Reddish colour ⇒ *T.B., Carcinoma of abdomen cavity
* Yellow colour ⇒ Liver diseases.*
* Milky colour ⇒ presence of chyle in fluid.

* Diet Modification ⇒ Low Sodium diet*

Rat :- Na^+ ↑ reabsp. of water.

Complication ⇓

1. Hypotension ⇒ II^nd Priority
2. Bleeding
3. Fluid & electrolytes Imbalance
4. Peritonitis. ⇒ M/c complication

Q. M/c complication of Paracentesis ⇒ Peritonitis.
⇓
*also M/c complication of Peritoneal dialysis

Q After Paracentesis, A Pt. complaints, Red colour urine, Expectation by nurse? ⇒ Urinary bladder puncture

a) ~~discontinuation~~ ×

24.Aug,22.

Thoracocentesis / Thoracentesis.

aka Pleural Tap.

⇒ In the procedure, remove fluid from pleural cavity.

Purpose

① Relieve the dyspnea.
② ↓se pressure on Lung tissue.
③ Maintain the tidal volume.
④ Diagnostic Purpose

Q. A dr. prescription for thoracentesis. Needle insert in which cavity of body?

a) Thorasic cavity
b) Pleural "
c) Peritoneal "
d) Pericardial "

Indications

1. Pleural effusion. (excessive amount of fluid collect in pleural cavity)

E.g.:- (i) Hemothorax. (blood collect in pleural cavity).
(ii) Hydrothorax (water collect in pleural cavity).
(iii) Pneumothorax (air collect in the pleural cav.)
(iv) Emphyema (pus collect in pleural cav.)

Q. Main purpose of Thoracentesis?

a) Pleural effusion b) Hydrothorax c) Pneumothorax

Procedure

① Right. Pt. Identification
② Check the Consent.

*. Consent in Written by Pt.

(High Risk Procedure & chances of Pt. death↑)

Articles ⇓

1. Needle:- 14-16G
2. Beta-dine :- 10% Povido-iodine
3. 2% xylocaine injectable
4. Sample bottle.
5. Thoracentesis tube
6. Preservative egent :- Na citrate
7. 3-way adapter.
8. Gauge piece (dry)

Position ⇓

1. Sitting Position# (Pt. sitting on chair or bed & both hands rise above the level of Shoulder) ⇓ Use the Inter coastal Space

↙ Fluid settle in lower side. Maintain gravity.

2. Cardiac position / Orthopenic Position ⇒ Pt. sit ⊂ help of Cardiac Table

↳ In Pt., who is unable to sit ⊂out support.
↳ Old age, Lethargic Pt.

3. Thoracentesis in an unconscious Pt. ⇒ Give Side-lining Post. ⇓ Eg ⇒ Unaffected Side Lining

Q. A Dr. Prescription for thoracentesis in an unconscious Pt.
Position :- a) Sitting b) Side-lining c) Side lining ⊂ Fowler ⇓ To maintain gravity
d) Careliac

II nd (I st)

* Give Side lining position ⊂ Fowler & affected side Hand ⇒ Rise (Use Inter-coastal Space)

Q. M/c Position used for thoracentesis :-
a) Sitting b) Side-lining c) Cardiac d) Prone

⇒ 9F. Q. Dr. Prescription for thoracentesis, but Pt. can't sit cou
Support, accurate position ⇒ Cardiac (lean Forward)

Site Selection

Posterior* ⇒ 7th, 8th, 9th intercoastal space, just below the Scapula

First priority.

Δsis :- X-Ray & Auscultation. → diminished sound ⇒ Max. dull sound.

• M/c Site For Thoracentesis * :- 8th & 9th ICS., just below the Scapula

* Site used For Pneumothorax (air) ⇒ 2nd & 3rd ICS., Anterior site.
Rat :- Air max ⊕nt in upper lobe.

Q. A Pt. Shift in ICU after Thorasic Cav. Surgery. N.O. identify a tube insert in 2nd & 3rd ICS. coz :- Rx of Pneumothorax.

↳ Clean the Site.
↳ Insert the Needle
↳ Remove the fluid
* Avoid aspirate the fluid bcz ⇒ Tracheal deviation.
* Amount of withdraw fluid ⇒ For diagnosis ⇒ 20-30 ml.
• Therapeutic purpose ⇒ 1000ml at a time.
• Max ⇒ 1200 ml.

↳ Repeat the procedure (if not effective) after 8 hrs.

→ After Procedure, ⇒ Apply dressing at Puncture site.

⇓

Gauge ⇒ dry.

- Position ⇒ affected side position.
- Rational :- (i) Prevent air entry.
  (ii) Prevent bleeding.

⇒ Imp. Role of Nurse

1. Check the Vital Sign.
2. Colour of Fluid.
3. Comfortness of Pt.
4. Movement of chest.
5. SpO_2

Q. Check the effectiveness of Thoracentesis.

a) ↑se chest movement
b) SpO_2 ↑
c) Relieve dyspnea
d) Pt. Comfort.

Complications.

⇓

① Pneumothorax ⇒ M/C
② Bleeding

* Pleurisy ⇒ Friction b/w Visceral & Parietal layer of Pleural Cavity.

→ Severe 'Knife like Pain'

Mgmt. → Give affected side position.

⇓

Pressure ↑ ⇒ ↓se the friction b/w both layers.

Q. Open wound on thoracic cavity / trunk. during breathing, Sound.? ⇒ Sucking Sound (due to air leakage)

26.Aug.2022.

'Biopsy'

F.N.A.C. ⇒ Fine Needle aspirate Cytology. (Referral to biopsy).

- **Definition**:- Small Quantity of tissue collect from affected organ.
- **Purpose**:- Cytological & Histological examination.

Organ Transplantation
⇓
Organ donation
⇓
donor ⇒ Brain-dead Pt. ⇒ '**Cadaver donor**'
⇒ Inform UNICEF Team → Meeting c Pt's attender

Heart ⇒ Myogenic
⇓
keep functioning even if brain-death, if O2 provided.
So Pt. on ventilator, organ → functioning.

Green corridor - Corridor for organ transportation from donor's hospital to reciever / transplant hosp.

* Box use for transport ⇒ **Ice box** ⇒ of **N.S.**
* Before organ implant ⇒ Wash the Organ c̄ **N.S.**
* Kidney implant in **Pelvic Cavity** * (Blood supply **#** **Iliac artery** c̄ in)
  (old Failed kidney will be at its place)
* Reciever is advised to admit in Hospital ~~before~~ **4-6 hr** ≠

1. Liver Biopsy

- Vit. K ⇒ Single dose only ⇓ Shows eff. in 5-7 days. if not eff. ⇓ Vit. K resist ⇓ Infuse Plasma

Small Quantity of tissue collect from liver

• Purpose:- Cytological & Histological Examⁿ.

Indications → Liver cirrhosis, Liver failure, Liver Carcinoma, Liver Transplant.

* Prepration before Liver Biopsy ⇒

1. C.B.C. - Platelet count.
   - P.T. (Prothrombin count) (Normal ⇒ 9.6-11.8 Sec) ±2 ⇓ 2-3 x ↑ during anti coag. therapy
   - B.T.
   - C.T.

* Prothrombin Time (9.6-11.8 ±2) sec :-
  - ↳ checked by INR (International Normalise Ratio) *
  - PT depend on Vit. K. depended Glycoprotein.
  - PT ↑se ⇒ Rx :- give Vita. K. (10 mg I/M) < 5 mg / 5 ml.
  - ↳ Check eff. of Vit. K. in 5-7 days (Single dose)

• Vit. K :- if not eff. then infuse FFP.

Q. Check the frequently effect of Oral Anti Coag. (Warfarrin) used for Long term use. ↑ (oral)

(a) P.T. (b) B.T. (c) C.T. (d) APTT (in Injectible/heparin)

→ Pt. take anti-coagulant ⇒ PT ↑ ⇒ 2-3 X

Q A Pt. take warfarrin & Check the lab. report, PT = 30 sec., I^st/9mp. Nsg/R.I
(i) Stop Warf. (ii) Inform dr. (iii) bleeding precaution (iv) documentation

ZARK

* Bleeding Time :-

2 methods

Asia — Duke (Hot Countries) ⇒ Site ⇒ Ear lobe* (max gap of capp.↑)

IVY methods ⇒ site ⇒ chest ⇒ incision (trunk rgn

(Cold Env.) ⊖ve temp.

- needle in ear lobe ⇒ direction ⇒ vertical*
- wipe the site by dry gauge piece in every 30 sec.
- Blood stop ⇒ Bleeding time ⇒ 2-8 min. (normal)

⇒ Contra-indications ⇒ (i) ↑ed PT, B.T., CT. (Hemophilia, coz of Pernicious anemia ⇒ Vit. B12 def.)

(ii) low platelet count.

(iii) HTN

(iv) Vit K deficiency → (PT↑)

⇒ Procedure ⇒

- ⊙ Right Pt. identification
- ⊙ Check the Consent
- ⊙ Use communication if Anxiety
- ⊙ Articles :-

(i) Needle :-

→ Vim Silverman needle*

→ Menghini needle*

(ii) 10% Beta-dine / Povido-iodine

(iii) Local anesth. ⇒ 2% Xylocaine inj.

(iv) Sample bottle

(v) Preservative agent ⇒ 10% Formaline* (in all Biopsies)

→ dead bodies are also preserved in 10% Formaline

→ cover by Grey SHEET.

* Procedure ⇒

* Use Inter coastal space

• Position → Give supine position & Right Hand apply under the Head. & place pillow / Sandbag under waist.

* Prominent the Site.

• Site Selection :- 8th / 9th Inter Coastal Space in Right Hypochondral Region.

Q. Accidently, needle insert above the 8th ICS. which complication arise?

a) Needle puncture the Heart
b) bleeding
c) diaphragm injury
d) None of above

→ Clean the Site ⇒ Axilla to Pelvic cavity.

→ Give instructions to Pt. ⇒ 2-3 time inhale & exhale then hold.

Ref. ⇒ Prevent diaphragm injury,
lower / ↓se thorasic cavity pressure
diaphragm relax ⇒ move upwards.

Q. Which of the Following Insto. given by nurse to Pt. before Liver biopsy?

(Use muscle strength → Resp. muscles
Breathing exercise In COPD Pt.

a) Inhale & Hold *
b) Exhale & Hold ⇒ IInd Pri.
c) Inhale, exhale & Hold Ist
d) Valselum maneuver

↳ also during Enema

↳ Hold for 5-10 sec
↳ For procedure completion.
⇓
Insert the needle

Needle insert in Liver
⇓
Flush the needle c NS.
⇓
Collect the biopsy (5-10sec.)
⇓
Biopsy preserve in 10% formaline.

⇒ Amount :- 0.2-0.5 gm (in Every Biopsy amnt)

⇒ After Procedure ⇒ apply pressure at puncture site*
⇓
apply dressing ⇒ dry gauge piece.
⇓
provide position ⇒ Right lateral position
(To prevent bleeding)
For 3-5 hrs. regular pressure apply.

Q. After Liver biopsy, give Right lateral position.
Purpose ?
a) Prevent bleeding
b) Prevent bile leakage
c) Prevent Pneumothorax
d) Provide comfort.

* Nsg. Role after Liver Biopsy → 1. Check Vital Signs regularly.
2. Pain at Site. (Frequency)
3. Check the Comfortness.

Q. After Liver biopsy, which finding check by nurse, then just inform the dr. (more than 1 option)
(i) Body Temp. = 99°F
(ii) Hypotension c Tachycardia → Internal bleeding
(iii) Hematoma at puncture site → "
(iv) Nausea c Flushing of face

Amyloidosis

∴ Instructions during discharge:-

→ Avoid Heavy wt. lifting.
→ Avoid exercise
→ Avoid cough.

• Rat :-
⇒ Can lead to dislogged of Clot.

⇒ Flat enema ⇒ For Δsis.
⇓
'contrast'

• Pacemaker of Kidney ⇒ Minor Calyx.

2. Renal Biopsy

→ Small Quantity of tissue collected from Kidney.

• Purpose ⇒ Cytological & Histological Examination.

• Indication ⇒ Renal Failure, Renal Transplant, Nephrotic Syndrome, Glomerulonephritis., Amyloids.*
⇓
Abnormal protein ⇒ deposit on Heart, Kidney, Liver.

⇒ Cell collected for stain ⇒ Congo Red Cells.*

Q. Confirmative exam^n for Amyloids ⇒ Renal biopsy.

• Contra indications ⇒ ① Bleeding disorders. ⇒ ↑ PT/CT/BT, Hemophelia, Thrombocytopenia,
② HTN.
③ Single Kidney
④ Wilm's tumor.
↳ Wilms' tumor ⇒ MIC type of Kidney Cancer in children.

Preprations ⇓
① CBC Count, PT, BT, CT.
Imp. ② Intra-Venous Pylogram. (I.V.P.)
↳ Indication ⇒ Check the circulation of Kidney.
↳ Chem. used ⇒ Contrast ⇒ Iodine dye
⇓
absp. in X-Ray
⇓
Check the circulation of Kidney.

Nsg. priority (Before IVP / admn. contrast)

① Ask about Sea Food allergy.

② Instruct Pt :-

→ Salty taste of mouth after procedure.

→ Flushing of Face (Redness)

→ Nausea - Vomiting - Headache - Fever.

• Allergic tests are done by Intra-dermal ⇓ Slowest absp.

• I/V Pylogram ⇒ Iodine injection / angiography / myliography

** Q. After IVP / contrast infusion / angiography / myliography, what is the imp. role of Nurse?

Ans. ↑se Fluid intake ⇒ I/V therapy → dialysis ☺

{2000-3000ml}

↳ Rat. ⇒ Escape the Iodine out.

* Tumor identify in Kidney ⇒ Select other site for biopsy.

⇒ Procedure ⇓

① Right Pt. Identification.

② Check the Consent.

③ ↑ Communication = if anxiety ☺

④ Articles :-

→ Needle ⇒ 14-16 Gauze.

→ 2% xylocaine Inj. ⇒ Local anaesth.

→ 10% Povido Iodine ⇒ Clean / Paint the Site

→ Sample container

→ preservative agent ⇒ 10% Formaline

→ Gauge piece.

⇓

Perform the Procedure

* Position ⇒ Prone position

↳ Thin person ⇒ Pillow apply under abdomen ⇓ Rat. Prominent the flank region.

Site Selection ⇒ 11th Rib to 2nd Lumbar Vertebrae
⇒ if tumor ⊕nt in any area ⇒ avoid that site.

⇓

Needle insert in kidney.

⇓

Flush the needle ⊂ NS.

⇓

Collect the biopsy (0.2-0.5 gm)

⇓

Preserve in 10% Formaline

⇓

Apply pressure at puncture site,

⇓

Apply dressing dry

⇓

Provide Supine position & apply pillow under the puncture site.

After Renal biopsy ⇒ Imp. Role of Nurse :- (i)-Check Vital Signs
(ii) Symptoms after Renal biopsy
↓
identified by Nurse → inform the Dr.

→ Flank region pain & radiate in lower extremities.

⇓

'Cause ⇒ Clot dislogged & move to ureter.

Q A Post Renal-biopsy Pt. complaints flank region pain & radiate lower side/Groin region. what expectation by Nurse

a) Renal stone → Classifical Symp-
b) Ureter infection
c) Clot in ureter
d) Internal bleeding

Q Imp. role of Nurse in Previous Q :-

a) documentation

b) Inform the dr.

c) Give medicine

d) Give comfort position.

Q After Renal biopsy, A N.O. identifies Hematoma at punctur site, Imp. role of nurse?

a) Give cold application. b) Give Hot application

c) Inform the dr. d) documentation

Q A N.O. check the vital sign in a Post Renal biopsy Pt, which finding check & just inform the Dr. ?

a) Temp. = 99°F. b) Hypotension & Tachycardia

c) HTN & Bradycardia c) Hypotension & Tachypnea.

Internal bleeding & body compensation

Q A. Pt. after Renal-biopsy complaints of Red/Pink colour urine, imp. role of Nurse ⇒ Inform the Dr.

Internal bleeding

Complications.

1. Haemorrhage. 2. Hypotension.

* During discharge, advice Pt. to avoid exercise & Heavy weight lifting.

3. Bone Marrow Biopsy

→ Small Quantity of tissue collected from bone marrow (Red).

• **Purpose** ⇒ Cytological & Histological Examination.

• **Indications** ⇒ Bone marrow transplant, Blood Carcinoma,
- abnormal size & shape of blood cells,
- aplastic anemia (Bone marrow damage).

⇒ First time Hemopoisis. ⇒ Yolk Sac (From 2 weeks)
(Intra-uterine)
↓
Liver, Spleen (12 wk)
↓
Bone ⇒ both long & Flat.

* After 21-23 yr., Long bones ⇒ Red bone marrow converts into Yellow bone marrow,
* So Hemopoisis only in Flat bones.

• **Site Selection** ⇒

Bone Marrow biopsy ⇒ (i) Long bone (ii) Flat bones.
↓
{only in <2 yr. child}

(i) Sternum.
↓
Upper site of Sternum.
'Manubrium' ⇒ position ⇒ (i) Fowler. (ii) dorsal recommend

* Complication :- (a) Pneumothorax

(ii) Vertebrae → Lumbar ⇒ L3-L4. ⇒ C-SHAPE

• Complications :- C.S.F. leakage

(iii) **Iliac Crest → MIC. Site used for B.M. Biopsy
↳ Posterior aspect is used more than Ant.
↓
I^st prio. 2cm Post.
↓
2cm Anter.
II^nd

Q. M/C Site used for B.M. Biopsy?

(i) Long bone
(ii) Flat bone
(iii) Short "
(iv) all.

(i) Iliac crest
(ii) Manubrium (sternum)
(iii) 2 cm. post. iliac crest
(iv) 2 cm ant. iliac crest

Q. In an Obese person, M/C. site for B.M. Biopsy? ⇒ 2 cm ant. iliac crest [also in preg" lady].

⇒ Position
⇓
Prone position
(M/C)

Rat:- Prone is can not be given in both cases.

⊖ Biopsy collect from ant. iliac crest.
↳ Side lateral position (unaffected) *
E.g:- If Lt. side for biopsy ⇒ Right lateral. ☺

⇒ after biopsy (iliac crest) ⇒ recommend → Recumbent position.
↳ complication ⇒ Bleeding* (M/C in biopsy).

(iv) <2yr. child ⇒ Tibial Condyl (Long bone)

Q. Biopsy collect in a 7 yr. child. Site use for biopsy?
a) Long bone b) Flat bone c) Iliac crest d) Scapula.

Procedure
⇓
1. Right Pt. Identification.
2. Check the Consent.
3. Articles ⇒
   - Needle ⇒ Jamshidhi needle (14-169) ⇒ Strongest needle
   - Betadine ⇒ 10% Povido iodine
   - Preservative agent ⇒ 10% Formaline
   - Sample container
   - 2% xylocaine injectable ⇒ 'Local anesthesia'

- Position ⇒ q/c to site-selection.

⇓

Needle insert

⇓

Aspirate the sample (0.2-0.5 gm)

→ Storage time ⇒ 7 days. in
- Formaline.
- Temp. ⇒ 2-8°C.*

⇓

→ as policy of Hosp

⇒ Complication (M/c) ⇒ bleeding, pain.

31.08.22

Instillation & Irrigation.

Instillation ⇒ A liquid drug administer in body cavity or orifice of body by drop-to-drop.

Irrigation ⇒ Clean the body cavity or oriffice.

Urinary bladder Irrigation

" Clean the Urinary bladder".

Purpose ⇓ → Wash Urinary bladder

Indications ⇓
- Remove blood clots.
- Remove the mucus & Pus.
- Treat the inflammation or infection.
- ~~during~~ / before TURP, during & after TURP.

Trans Urethral Resection of Prostate

Procedure ⇓
1. Right Pt. Identification
2. Check the consent.
3. Articles :- Solution / Chemical
   - Temp. ⇒ as of Room temp.

(i) Normal Saline → (M/c)
(ii) 5% dextrose
(iii) acetic acid
(iv) $KMnO_4$
*(v) Glycerol / Glycerin ⇒ Hypertonic

Q. M/C Soln used For bladder irrigation ⇒ N.S. ⇒ Rat :- Isotonic Soln

Glycerol ⇒ used during T.U.R.P ⇒ Trans urethral resuccecion of Prostate

NS can lead to conduction ↑ in procedure & else

Q M/c soln used for bladder irrigation during T.U.R.P.?

Ans.:- Glycerol.

* Q Before & after TURP, soln used for urinary bladder irrigation? Ans. ⇒ N.S.

- KMnO4 ⇒ M/c antiseptic soln.
- Acetic acid ⇒ M/c in gram ⊖ve bacterial soln.
  e.g:- pseudomonas.

Articles

1. Proper sized Catheter
   - Size ⇒ 18 Fr.* (Rat ⇒ Use larger size to prevent Stenosis / blockage)*
   - Tripple lumen
   - 2-way catheter.

Q. Catheter use for T.U.R.P. irrigation?

*Ans. 'Cudal Catheter' (Curved catheter).

Caudal ↙ ↳ Triple lumen

⇒ Betadine ⇒ Clean the site around the metus. → Metal Catheter Junction'
- twice in a day. (To prevent UTI)

- if Pt. has allergy ∈ Betadine ⇒ Use ⇒ Chlorhexadine*

⇒ N.S. / distill water ⇒ use ⇒* inflate the cuff.
- N.S. ⇓ ✓ in case of Temprory Catheter
- distill water ↘ ✓ for long time catheter

⇒ IV Stand

⇒ Syringe

⇒ 2% Xylocaine jelly (water Soluble).

1. Procedure

- Position for catheterization ⇒ I^st ⇒ Frog's legged Position
  II^nd ⇒ Dorsal Recumbent
  III^rd ⇒ Supine (Male).

- Position during U.B. irrigation ⇒ Lithotomy
  ⇒ Rat. ⇒ Prevent the Ligament's injury

* Lithotomy also used in Labour ⇒ Prevent Ligament injury ∴ PPH.

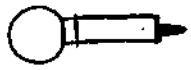
Method of irrigation :- 2 Methods.

(i) Open Method

Rarely use in clinical Practice

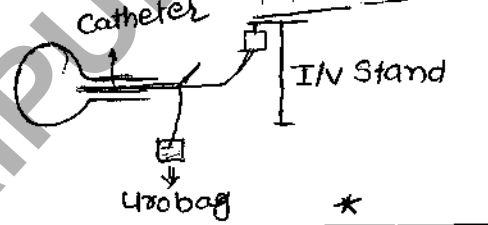
Rat. :- more chances of UTI.*
- Wall of bladder gets irritate.*

⇒ Fluid pushed by Syringe = 150 ml.
⇒ Fluid removed by Ascepto Syringe



(ii) Close method.

M/C used



Img

⇒ Flow Rate ⇒ 50-60 ml/hr *

Q. During Urinary bladder irrigation, a N.O. check clot/mucus/* pus/dark black ∈ clot (old blood). What is the imp. role of nurse?

a) Stop the irrigation
b) Inform the dr.
c) ↓se the flowrate
d) ↑se the flowrate ⇒ Rat. ⇒ Prevent the Stenosis/blockage.

Q. During bladder irrigation, catheter block, imp. role of nurse?

a) Replace ∈ new catheter.
b) documentation
c) Irrigate the catheter ⇒ by N.S.
d) Inform the dr.

Q. during bladder irrigation, N.O. find ~~Feed~~ Fresh blood in Urobag, imp. role of nurse?

a) Inform the Dr.
b) document
c) Use flow rate
d) Stop the procedure

⇒ Urinary bladder irrigation until ⇒ Fluid - clear came out / Urine colour fluid came out.

⇒ Check the Urine output ⇒ Urobag fluid - irrigation fluid (outcome fluid)

E.g. 800 ml - 600 ml = 200 ml U.O.

Q. If Pt. complaints about drooling of urination after remove the catheter, Imp. role of Nurse ⊢

a) Re-insert catheter
b) documentation.
- Normal finding bcz
- Sphincter ⇒ relaxed & Subside after 24 hrs. ⇒ If not Subside after 24 Hrs. ⇒ Inform the Dr.

c) Inform the Dr
d) None.

Eye Instillation & Irrigation

3. Sept, 2022.

Eye Instillation ⇒ Liquid medication administer in eye, drop-by-drop

- **Purpose** ⇒ Treat the infection.
  - ⇒ Before Eye Examination
  - ⇒ Before Eye Surgery.

Soln

① **Erythromycin** ⇒ use mostly in neonates. *
- Prevent the Gonoccal Infection
- Earlier ⇒ Silver nitrate used.

E.g:- ② **Mydratic** ⇒ Atropine Sulfate ⇒
- Use :- dilate the pupil.
- C/I in :- Glucoma Pt.

* Atropine Sulfate given to child ⇒ Nsg. Priorities ⇒
- Regularly check the bowel movements

Rat ↘ bcz Atropine ↓es peristaltic movement.*
- ⇓
- Abdominal distention.

③ **Miotic** ⇒ Pilocarpine ⇒ Given to Glucoma Pt.
- Use ⇒ Constrict the Eye Pupil.

Q. Overdose of Pilocarpine, expected mgmt by nurse?

Ans. Adminster Atropine Sulfate –

Procedure

Position ⇒ Rose position
- also use sitting position ⊂ Head Hyperextend

⇒ Eye drop rub b/w both palms.

⇒ Pressure apply on lower lid ⇒ Create a pocket (cul-de-sac)

⇒ Drug instillation in lower Conjuctival Sac ⇒ avoid cornea

⇒ Give instructions to Pt :- look upward & backward
↓ ↳ 2 drops

FACTS

- Gap b/w the drops ⇒ 30 sec *

- after admn drug ⇒ N.O. apply pressure on lacrimal Gland for 30-60 sec.
  Rat :- Prevent drug absp in oral cav. ⇓ middle/inner can.

- give instructions after instillation ⇒ loose close the Eyes

→ Liquid & Semi-Solid both drugs prescribed to Pt. :-

- 1st drug administered ⇒ Liquid then Semi Solid.

Q. Gap b/w Semi Solid & Liquid ⇒ 5-10 min.
I st priority II nd

Q at least gap b/w Liquid & Semi-Solid/Oil form drug :-
(i) 3 min (ii) 5 min (iii) 10 min (iv) 60 sec

→ direction ⇒ Inner canthus to outer. (Semisolid application)

Size ⇒ Grain of Rice / 1/8th inch

- Eye Irrigation ⇓ Wash/Clean the Eye.

Purpose :- ① before eye examination
② before eye Surgery
③ Treat the infection
④

Indications :- ① Treat infection, before Eye instillation
② Remove foreign particles (soil, dust, mosquito)
③ Chemical injury

Q. Pt. came in emergency c chem. injury in Eye, Expected nsg Mgmt?

a) Eye irrigation b) Inform Dr. c) Remove chem

Q Pt. came in emerg. c wooden piece / sharp object injury / penetrate In Eye, Imp role of nurse :-

a) Remove the piece
b) Eye irrigation
c) Inform the Dr ⇒ 3rd
d) cover the eye c Eye patch ⇓ 2nd Prior.
e) ask about visual activity.

* Cover both eyes.
⇒ Instruct the Pt, ⇒ don't rub the eye
⇒ coz it can worse the injury.

* In unconscious Pt. ⇒ Cover the eyes by Eye Patch / Pad.
Rational → Prevent dryness → Ulcer.

Perform the Procedure :-

(3) Articles / Solution → Clean water → N.O. use c out Dr. Prescription
- Normal Saline ⇒ M/C sol^{n}
- Boric acid 1-2% ⇒ M/C antiseptic
- Rh → esp. in Chemical injury

• Position :- Supine c Head tilt - affected side *

• Height of I/V Stand ⇒ 6-8 inch

• Amount of Fluid (max) for irrigation of each eye. ⇓ 1000ml / a/c to Dr's Prescripti

• after Eye Irrigation ⇓ Nsg priority

↳ Give instructions ⇒
- use Sunglasses.
- don't drive for the next 2-4 hours.
- Close the eyes just after irrigation for 30 mins. Rat (To prevent irritation, Redness

Sep. 8, 2022

Nasal Instillation

A liquid drug administered in both nostrils by drop-to-drop

Purpose :- ① Treat infection
② Open nasal congestion
③ Anesthesia.

• Nsg Priority before Nasal Instillation ⇒

1. Collect History :-

(I) Allergy- (II) HTN] ⇒ If ⊕nt, avoid nasal instillation

Rat :- prevent CNS stimulation.

↳ Risk of Headache, irritation, confusion - Coma.

Coz nasal cappillaries are highly Sensitivy.

* Nose bleeding ⇓ nasal packing with Adr. gauge piece (I) /nor-Adr. (II) Emergency Hormone/NT.

⇒ Visualise the nostril by help of Pencil Torch.

Rat. → Check the effect of drug. for - Look for any Edema.

• Procedure →

Position ⇒ Rose ⇒ Proper visualise the Sinus. (To prevent aspiration of drug.)

* If Sinus not visualised properly, avoid nasal instillation

→ Rub the nasal dropper in both palms.

- First drop discard.

→ Only use water Soluble drug.

* Avoid oil-Soluble drug. → Rat ⇒ more chance of aspiration & can lead to pneumonia 'Rusty Colour Sputum'

→ Give instruction to Pt ⇒ Breathe by mouth. (Prevent aspiration)

→ After nasal instillation, give the position. ⇒
Remain in same position (Ros
For 5 min.
• Sat ⇒ for better absp.
& keep breathing by mouth (5 min)

0.5-1 inch height of dropper

⇒ after 4-6 hrs. Check the nostrils for the effect of drug.

Nasal Irrigation

Clean the nostrils.

• purpose- (i) Treat the infection
(ii) Open the nasal congestion
(iii) Give Sedation
(iv) Remove foreign particles.

Q All Foreign particles remove through nasal irrigation except,
(i) Soil
(ii) Mosquito
(iii) Seeds-Grains.
(iv) All.

⇒ Solution ⇒ Temp. ⇒ as of Room Temp.
(i) Plain water
(ii) N.S. ⇒ M/c
(iii) H_2O_2 ⇒ when pus ⊕nt
(iv) Boric acid ⇒ antiseptic
(v) 10% Soda bicarbonate ⇒ nasal congestion

Procedure:- * Position:- Sitting & lean Forward
⇒ close the epiglottis, prevent aspiration

- IV Stand ⇒ 8-12 inches

Instructions :-

- Breathe by mouth.
- Any problem during irrigation ⇒ Rise the hand ⇓ Stop irrigation immediately.

Q. During nasal irrigation, Pt, rise hand. Imp. role of nurse?

(a) ↑se Flow
(b) ↓se Flow
(c) Inform the Dr.
(d) Stop irrigation.

⇒ after nasal irrigation ⇒ Provide blanket to pt.
Coz. Heat loss during irrigation.

Q. After nasal irrigation, imp. role of nurse ⇒ Cover the Pt. by blanket esp. Face.

Q After nasal irrigation, pt. complaints about shivering, Imp. role of nurse. (Alc to priority).
⇒ ① Provide blanket :- ② Steam inhalation :-

Wound Cleaning :-

- infected wound ⇒ central → Peripheral
  inner → outer
- open wound ⇒ I → O.
- Colostomy wound ⇒ outer → inner
- Surgical ~~wound~~ & stitches. ⇒ ~~)))))~~ up ↓ down ⇒ & high pressure
  removal if pus ↑nt.
  - If Hematoma seen during dressing → remove stitches

Ear Instillation.

- First Inf. in HIV ⇒ T.B.
- First Inf. in HIV in child (<3) ⇓ pneumonia.

→ Liquid drug admn. in ear by drop to drop.

Purpose ⇓
① Infection
② Remove/Kill the live foreign particles eg. insects, mosquito
⇓ *
By Sprit. (70% Isopropyl alcohol)
⇓
then remove by help of mineral oil.
③ Loose the wax. (irrigate after 3-4 days).

M/C Hosp. acq. Inf.
- adult ⇒ E. Coli
- <3 yr. child ⇓ Rotavirus.

Position ⇓
- Lateral & unaffected Side.
- Hold the Ear ⇒ direction ⇒
  - i) adult ⇒ upward & backward.
  - ii) Child (≤3 yr) ⇒ downward & backward

Straighten the canal.

- Remain the same position for 5 minutes.

* After instillation, N.O. give gentle massage by Finger at Tragus
Rat. ⇒ Move the drug inward. ⇒ Better effect of medicine.

Ear Irrigation ⇓

- Clean the Ear.

Purpose ⇓
① Remove the wax :- * wax don't remove by irrigation, then instillation before 3-4 days
② Remove foreign particle
③ Treat infection.

Q All Foreign particle remove from Ear by irrigation, Except!-
Ans. Grain & Seeds. (by Forceps)
④ Bithermal Caloric test.

Q. Dr. Prescription for Caloric test, N.O. prepration for :-

a) Check BMI
b) Fat metabolism
c) Ear Irrigation
d) Eye irrigation

↳ Indications :-

① Check brain stem fn.
* ② Check 8th Cranial nerve (vest-coch.) fn.
* ③ Check the toxicity of Streptomicin.
↓ anti-tubercullin

(Cross placenta) avoid in Pregn women
↓
• Baby ⇒ deaf & dumb.

• procedure (Bithermal Caloric) ⇒

• Cold water → outward move
• Hot water → Inward movement
both Ear Irrigation
↓
Check Eye movement

⇒ Both movement, Same time ⇒ Test False

Soln → Plain water
- Boric acid ⇒ antiseptic
- H_2O_2 ⇒ if pus ⊕nt in ear.
- N.S. ⇒ M/c

Procedure
• height of IV Stand - 6-8 inch
• Position ⇒ Supine & tilt the head in affected side.
⇒ direction ⇒ Hold the ear. Adult ⇒ upward - backward ☺
- Child (<3yr) ⇒ downward - back.

Q. during ear irrigation, Pt. complaints Vertigo (Ear-pain), Imp role of Nurse?

a) ↑se flow b) ↓se flow c) inform dr. d) Stop irrigation
↓
2nd Priority

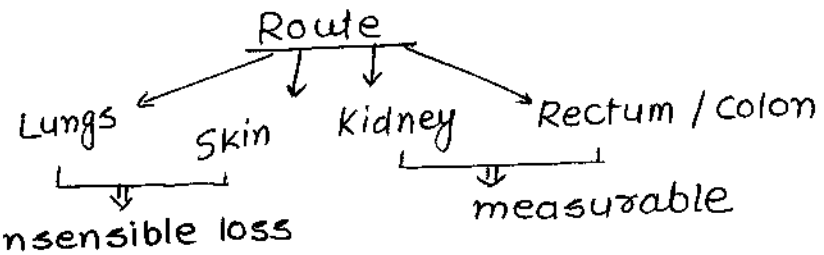
⇒ after Ear Irrigation ⇒ Provide the rest.

Elimination

Definition ⇒ Expulsion of waste outside body.

⇓

Route



* Insensible loss of fluid
  - ↳ amount not proper measured.
  - ↳ about 600-800 ml
    - ↳ I^st priority.

Lung
- Single loss ⇒ 300 ml fluid loss.
- Both Lungs ⇒ 400-600 ml

Q Amount of insensible loss. ⇒ (i) 400 ml. (ii) 600 ml. ✓(iii) 800 ml

(i) 200-400 ml.
(ii) 400-600 ml
✓(iii) 600-800 ml
(iv) 800-1000 ml

* **Urine Elimination** ⇒ Urine expell out through urethra.

• **Terminology** ⇒

→ Micturition ⇒ Normal process of urine pass out.

→ Dysuria ⇒ difficulty in urine pass out.

eg:- In U.T.I.

Symp. ⇒ Pain, Burning sensation

N.Mgmt ⇒ Give Hot application *

Q A. Pt. complaint for difficulty in urine pass out, what is the imp. role of nurse:- → Give Hot application.

(i) Catheterization
(ii) inform the dr.
(iii) Give cold application
✓(iv) None of the above

→ Polyureq ⇒ >2500 ml. Normal ⇒ 1000 - 2000 ml
Avg ⇒ 1500 ml.©

eg:- DM, DI, I/V therapy, Ise fluid intake, chronic alcoholic Pt.

→ Oligoureq ⇒ < 400 ml

E.g ⇒ acute renal failure, dehydration.

Q.1. Early indicator of SHOCK in a dehydration Pt. due to severe Vomiting & diarrhea :-

(i) white coated tongue → Late sign
(ii) ↓ tissue turgor → confirmative exam^{n} of dehydration
(iii) dark colour urine
(iv) Sunken fontanalle → only in neonates.

Q.2 Early indicator of SHOCK in Post-Sx Pt.:-

(i) Urine Pass out 20 ml / Hr.
(ii) " " " 30 ml / Hr.
(iii) White coated tongue
(iv) Restlessness → Hypoxia

Q.3. An accidental Pt. came in Emergency c Haemorrhage.
Early Sign of Shock?
(i) Urine pass out ↓se (ii) Bradycardia
(iii) Tachycardia (iv) HTN

→ Anuria ⇒ Urine pass out < 100 ml ©
Eg:- Chronic Renal failure

→ Urge ⇒ desire of urination but Pt. can control ⇒ 150-200ml
→ Urgency ⇒ strong desire of urination, unable to control ⇒ 500 ml
→ Emergency ⇒ Severe desire of urination, 600 ml. ⇒ urine pass out in small amounts

→ Capacity of Urinary bladder = 1000 ml ≅

* Incontinence of Urine / Stress Incontinence ⇒

⇒ Involuntary urine pass out.

- amount ⇒ 50 ml at a time
- during sneezing, coughing & Heavy weight lifting.

Nsg Mgmt ⇓ (i) Strict schedule for empty the urinary bladder

= day ⇒ every 2 hr.

= night ⇒ fluid intake ↓se before 2-3 hr of sleep.

Empty bladder in every 4 hr.

- avoid caffiene product.

* Avoid alcohol

* Effective Mgmt ⇒ Kegal Exercise. (cycling is supine pos.)

↳ effect in 2 weeks after

*Improve # perineal muscle strength

* Kegal exercise start after delivery

↳ after 2 wks. ⇒ for proper wound healing

* After piles, rectal surgery ⇒ kegal exercise after 2 wks.

* Sitz bath start after Vaginal delivery in after 24 hrs.

also give after Hemorrhoid surgery " (Prevent bleeding)

{Thai/Tub bath ⇓ Eg of Hot application}

Retention of Urine ⇓

Cause ⇒
- Lack of Privacy
- Anxiety
- Obstruction
- Post Sx Pt ⇒ • anaesthesia effect
- Prostate Pt.
- Inappropriate position.

*Proper Pos:-
- Male - Standing
- female - Squatting

Nsg Priority

* Assessment ⇒ Physical Examⁿ

** - correct way of Physical Examⁿ ⇒

(✓) Inspection → palpation → percussion → auscultation
(i)

* Abdominal Cavity ⇒ Inspection → ausc → perc → palp.

I Am PerPal → Palpation.

Inspection
Percussion
auscultation

⇒ Inspection ⇒ Tenderness in abdomen
⇒ Auscult ⇒ disturbed Peristaltic move.
⇒ Percussion ⇒ Tap ⇒ Artificial Sound produce
* Urinary bladder empty ⇒ Tympanic sound
aka drum like sound
* Urine ent in bladder ⇒ Dull Sound

Q. Post anesthetic Pt complain for strong desire of urination but unable to pass out. Imp role of Nurse?

⇒ a/c to priority ⇒ (i) Give privacy ⇒ cover by Curtain

(ii) Take Pt. in bath room & open tap Water
⇒ Give psychological Support.

(iii) Give gentle massage ⇒ direction ⇒ up to down*

(iv) Hot application through Sitz bath (110-115F)

(v) Inform dr. → Catheterization

Catheterization

Sept. 20, 2022.

Definition ⇒ In this Procedure, a small sized tube insert in urinary bladder through urethra.

- **Purpose** ⇓
  - Retention of Urine
  - Unconscious Pt.
  - Paralysis Pt.
  - Bed ridden Pt.
- **Indication** ⇓
  - Bladder irrigation
  - during T.U.R.P.
  - Sample collection
  - Long time Surgery
  - Pt. came in Emergency & Head injury.
    - *Rat. ⇒ Check urine output coz ADH disturbe
- **Procedure** ⇓
  1. Right Pt. Identification
  2. Check consent.
  3. Articles ⇓

* Catheter →

Size → Criteria for catheter ← age, duration, condition

(i) Adult ⇒ 16 – 18 French (ideal)
- max → For irrigation

(ii) Adult ♀ ⇒ 14-16 Fr.

(iii) Child ⇒ 10-12 Fr

(iv) Infant ⇒ 8-10 Fr.

Q. Size of Urinary catheter ⇒

a) 12 Fr. b) 14 c) 16. d) 18.

a) 14 mm. b) 16 mm. e) 5 mm d) 10mm.

1 Fr = 0.33 mm.

Types ↓ 1. Foley's Catheter :- aka "Indwelling Catheter"

- Types :- a/c to manufacturer ⇒ 2 Types
  - (i) Rubber Foley's catheter ⇒ use ⇒ short time / temprory.
    - can be used until 28 days ⇒ Post Op
  - (ii) Silicon Catheter ⇒ use ⇒ long time ⇒ upto 3 months.
    - paralysis, unconscious

⇒ a/c to clinical use :- (3) Types.

- (i) Single lumen ⇒ Temprory empthy bladder, - single time use
- (ii) double lumen ⇒ MC use in clinical practice*
  - surg. Pt.
- (iii) Tripple lumen ⇒ Urinary bladder irrigation;

Q. MC foley catheter used in clinical practice?

a) Single lumen
b) Double lumen
c) Tripple lumen
d) Silicon

2. Supra Pubic Catheter →

- indication ⇒ obstruction in urethra, Tumor, carcinoma, ulcer.
- Procedure ⇒ catheter insert direct in urinary bladder just above pubic bone through abdomen cavity. (2.5 cm above pubic bone).

* Imp. role of Nurse ⇒ 300-400 ml fluid admn. in bladder by help of Syringe **

Rat ⇒ Stretching of muscles.

⇒ After Catheterization, Urine flow not proper (if),
↓
pull back the catheter 2.5 cm.

3. Caudal Catheter {'Curve Catheter'} ⇒ for bladder irrigation esp. 'TURP'
   ↳ Tripple lumen, 2-way.
   ↳ 18 Fr. Size.

4. Malecot Catheter ⇒ Tip of catheter ⇒ "Mushroom like tip"
   Use → Open renal Sx ⇒ mostly in females.
   * painful catheterization.

5. ⇒ K-90 (also k/a ⇒ Straight Catheter, Robinson Catheter, Intermittent Catheter)
   Use ⇒ Temprory empty the urinary bladder.
   ⇒ Check the residual volume
   ⇒ During labour.

6. Condom Catheter ⇒ Use for urine sample.
   Eg:- Neonate, infant, toddler,
   - drooling of urination,
   - involn urine passout.

Other articles ↓

→ 10% Povido-Iodine ⇒ Clean the site.
↳ after catheterization ⇒ clean the site ⇒ twice in a day,
{one swab at a time} → To prevent UTI

→ 2% Xylocaine jelly ⇒ use - anesthesia & lubrication

→ Syringe 10 cc

→ NS / Water. ⇒ Inflat the balloon / cuff.

Q. M/c Soln → inFlate ~~the~~ baloon ⇒ NS ⇒ Temp. use / Short time
Long time ⇒ distill water
Siliconecatheter ⇒ "

⇒ Amount pushed ⇒ 5 - 10 cc

Q Amount for inflat the balloon of urinary catheter ⇒
- 5ml 10ml 20 ml 15 ml

• Capaccity of Balloon ⇒ 30 - 50 ml

⇒ Uro bag ⇒ 2L
↳ CHANGE WHEN Leak, puncture.

⇒ Position ⇒ - Frog's legged - I
- dorsal recumbent - II
- Supine → only for male

- Insert size ⇒ ♀ ⇒ 3-4 inch
♂ ⇒ 6-10 inch.

(1) Clean site before insert :-
- Female → seprate the labia minora by non-dominant hand & clean around the metus.
Rat ⇒ Prevent UTI.
• direction ⇒ anterior to posterior.
Vaginal orrifice to anal orrifice

- Male → clean glans of penis around the metus.
dir. → anterior to posterior.

• Give instructions to Pt. ⇒ Inhale & Hold.

⇓

Insert the Catheter.

Q. During Catheterization, meet a slightly resistance.

↳ Instruct the Pt. to feel for urination.

• Rat ⇒ Sphincter relaxed.

⇓

Catheter insert untill ⇒ Urine pass out

⇓

~~fixation~~ 2.5 cm / 1 inch advance

⇓

Fixation the Catheter.

• Fixation Site ⇒ ① Lateral aspect of thigh — I st

② Upper " " " — II nd

③ Inner " " " — III rd

Q Fixation site of Catheter ⇒ Lateral & Upper aspect of thigh

*Q. Catheter insert in male ⇒ Slightly Grasp the Penis by non-dominant hand.

Rat ⇒ *To provide traction & prevent injury

Care of Catheter ⇓

① Time to time empty the Uro-bag @ 3/4th level.

② Clean the Site ⇒ * twice in a day. /

* Every Shift.

- around the metus. (Catheter-Metal Jn.

Colostomy bag empty at 1/3rd level.

Bowel Elimination

• Terminology ⇒

◎ defecation ⇒ Normal process of stool pass out.

◎ constipation ⇒ difficulty in stool pass out.

• Types :-

(i) Primary constipation ⇒ due to low fibre diet, ↓se fluid intake.

(ii) Secondary constipation ⇒ due to disease condition.

- Atonic constipation ⇒ due to ↓ed bowel movements

Normal ⇒ 16-20./min

· < 10 :- atonic constipation

- Spastic constipation ⇒ due to spasm in intestine.

- cause ⇒ Hypocalcemia.

- Pseudo-constipation ⇒ due to change in environment.

'Psychological constipation'

- Iatrogenic Constipation ⇒ Given by Healthcare worker

- by mistake / ~~Could~~ faulty procedure

eg :- overdose of opioids.

◎ Impection ⇒ Unable to pass out stool.

Q. Meaning of impection-

a) difficulty in stool passout.

✓b) unable to stool pass out.

⇒ Pt. unable to defecation ⇒

• Nsg Priority ⇒ ① Give Privacy ⇒ curtain

② Give proper position ⇒ 'Squatting position'

③ Ambulate in ward. & { ↑se Fluid intake ; ↑se fibre diet }

⇒ If Pt. is unable to ambulate. ⇒ Give knee-chest post ⇒ 'Muslim-Prayer position'.

• Rat :- ↑se pressure on abdomen cavity

↓

Give Gentle massage. (up to down)

↓

Perform Vulselum Maneuver

(Forcefully insert finger in rectum / anal area)

Rat. ⇒ To stimulate vagus nerve - (Parasym. N.S. Stimulate)

⇒ contra indicated in Cardiac Pt.

Enema

- 'Small Quantity of fluid admn. in Rectum / bowel.'

- Purpose ⇓
  - Relieve the constipation,
  - Relieve the flatus.

Indication ⇓
- constipation
- before bowel surg.
- diagnostic purpose

C/I ⇓
- Cardiac Pt.
- Appendicitis
- Fluid & Electrolyte imbalance

Type ⇓ 3 Types ⇒ ① Barium
② Evacuent
③ Retension

1. Barium ⇒ aka 'diagnostic enema' / 'flaek enema'

Indication ⇒ diagnostic examⁿ of. colon
- Tumor in colon
- obstruction in colon
- Inflammation in colon

→ Solⁿ ⇒ Barium Sulphate (Sulpher powder)
or Silver nitrate

Q Dr. Prescription for tumor examⁿ in colon enema prepare by nurse?

Ans. Flat Enema

Nsg priority after Barium ⇒ ↑se fibre diet
↑se fluid intake

Rational ⇒ bcz Sulpher powder contrast
⇒ N/V

Event

- **Evacuant**
  - Ⓐ Simple Enema
  - Ⓑ Medicated Enema
    - → Purgative Enema
    - → Oil Enema
    - → Carminative "
    - → Astrigent "
    - → Anti-helmintic "
  - Ⓒ Cold Enema
- **Retention**
  - S → Stimulant Enema
  - A → Anesthetic "
  - S → Sedative "
  - N → Nutritive "
  - E → Emollient "

* Diff. b/w Evacuant & Retention Enema.

	Evacuant	Retention
Purpose ⇒	Clean the Vowel	⇒ Therapeutic purpose
Amount ⇒		
• Adult ⇒	500-1000 ml	⇒ 100-150 ml
• Child ⇒	250-500 ml	⇒ 100 ml
• Infant ⇒	150-250 ml	⇒ 150 ml

* 1 Pint ⇒ 500 ml

Q Unit of Enema ⇒ ⓐ ml ⓑ gm ⓒ Pint ⓓ ugm.

Q Amount of Evacuent Enema?
ⓐ 1 to 2 pint ⓑ 1/2 to 1 Pint
ⓒ 500 meq/lit. ⓓ 500 mg/Lit.

Evacuant	Retention
Temp. ⇒ Adult ⇒ 105-110°F. Child ⇒ 100°F	⇒ As body temp.
Frequency ⇒ more than one time max 3 time	- Single time

Q All Retention ~~time~~ enema give one time except-
Ans Nutritive Enema

Stay In Colon: 10 min. | 2-4 hour

Q. All evacuant enema stay in Rectum for 10 min Except?

Ans. Oil Enema

Rat ⇒ due to slow absorption.

* Height of Enema

Evacuant	Retention
45 cm (18 inch)	8 inch / 20 cm.

Q Height of Enema?

(A) 45 cm. (C) 25 cm

(B) 20 cm. (D) 35 cm.

Q. M/C Enema use in clinical Practice?

(A) Simple Enema

(B) Purgative " ⇒ Rat ⇒ Use bowel movement

(C) Stimulant "

(D) Carmitive "

Q M/C Enema use in child:-

(A) Simple. (B) Purgative (C) Oil. (D) Astrigent

* Rat :- Slow absorption

2. Evacuent Enema :-

(i) Simple Enema :-

Purpose ⇒ Relieve the constipation

⇒ Chronic constipation / impection

Chemical ⇒ ① Soup + Water.

50 ml + 1000 ml.

② Normal Saline

Q. which of the following enema prepare by nurse before bowel surgery.

(A) Simple Enema (B) N.S. Enema
(C) Purgative " (D) Stimulant Enema

Q. Megacolon Surg ⇒ which enema use before surg?

Ans. N.S. Enema

(ii) Medicated Enema ⇓

(a) Purgative Enema :- aka 'glycerine Surgery'

* M/c use in clinical practice

• Indication :- ↑se the bowel movement.

• Chemical / Soln ⇒

① Glycerine ⇒ If constipation not relieve, then add

② Cluster oil.

Glycerin + Cluster Oil.

1 : 1

then add ⇒

Mg SO4 : Glycerin : Cluster Oil

30 ml : 60 ml : 90 ml.

1 : 2 : 3.

* Purgative enema C/I in ⇒ Child.

Rat. ⇒ Prevent diarrhea

(b) Oil Enema ⇒ aka 'Laxative Enema', Stool Softener

** M/c used in child Bcz slow absorption.

- Stay colon for 2 hours

• Soln :- ① Olive oil ⇒ constipation not relieve than add

② Cluster Oil + Olive Oil

1 : 2

© Astrigent Enema :- aka ⇒ Anti-inflammatory enema

- Use ⇒ Relieve the lower bowel inflammation.
- Soln ⇒ ① Alum + water
  30 gm 600-1200 ml
  ② Silver nitrate ⇒ not use in current.

ⓓ Carminative Enema :- aka Anti Spasmodic Enema

- Use → ① Remove the flatus / gases
- Soln → Terpentine oil + water
  8-16 ml 600-1200 ml.

ⓔ Anti-Helminthic Enema :- aka Anti Parasitic Enema

- Use → destroy the Growth of Parasite
- Soln → NaCl + water
  60 gm 600 ml
  1 : 10

(iii) Cold Enema ⇓ aka 'Ice Enema'

- Indication ⇒ Use in Hyperpyrexia >105°
  or Heat Stroke

* Imp. ⇒ Temp. of fluid ⇒ 65-85°F

Q Temp. of Cold Enema?
ⓐ 65°F ✓ⓑ 70°F © 85°F @ 80°F

- Complication ⇒ Hypothermia
  Constipation.

* Temp. ↓es by conduction method **

Retention Enema

1. Stimulant Enema ⇒

- Indication ⇒ Prevent shock due to overdose of opoids.
  - Eg :- Morphine Sulphate
  - Poisoning.

- Soln ⇒ Black coffee ⇒ 1 tbsp. coffee powder in 300 ml water
  ⇒ Temp :- 108°F.

Q All Retention Enema temp. as of Body temp. except?

Ans. Stimulant Enema.

2. Anesthetic Enema ⇒ Indication ⇒ Colon Surg.

- Chem. ⇒ Avertine

Not used in Current.

3. Sedative Enema ⇒ Indication ⇒ induce for sleep.

Eg :- Carcinoma Pt. (In Paliative Care)

- Chem ⇒ Potassium Bromide ©

4. Nutritive Enema ⇒ Indication ⇒ Bleeding disorder Pt.

e.g :- Severe thrombocytopenia
Hemophilia

- Chem :- NS, 5% dextrose.
  - Peptide milk.
- frequency ⇒ 4-6 times/day

5. Emollient Enema ⇒ Indication ⇒ Softening mucosal memb. of Rectum / anal area bcz mucosal memb. get irritated due to severe diarrhea.
⇓
- Pt. complaints burning sensation

• Chem ⇒ Starch water + Opium water*

Procedure
⇓
• Articles ⇒ Can.
- Catheter ⇒ Size - Adult ⇒ 22-30 French*
- Child ⇒ 14-16 Fr.
- Infant ⇒ 12-14 Fr.

- 2% Xylocaine Jelly
- Bed Pan

• Position :- Sims lateral } Maintain the gravity.
II :- Left lateral }

* Child ⇒ dorsal recumbent (<8 yr)

⇓
Remove air from can & tube (to prevent flatus & Abd. distention)

Insert Size :- Infant ⇒ 1-1½ inch
Child ⇒ 2-3 "
Adult ⇒ 3-4 inch

Instruction to Pt. ⇒ Exhale & hold
⇓
Insert - during catheter insert in rectum, meet a resistance.
↳ open the flow - infuse some amount of fluid

Q During Enema catheter insert, meet a slight resistance, imp role of Health Care worker.

(i) Forcefully insert.
(ii) Rotate insert.
(iii) Pull back & insert
(iv) infuse some amount of fluid.

* Flow Rate ⇒ 1 Lit in 10 min.

- during Enema, Pt. complain for cramps (abd. pain).
  ⇓
  Stop & Restart after subside the cramps.

- Pt. complaints ⇒ ↑se the freq. of cramps/pain.
  ⇓
  Remove catheter & provide bed-pan.

Q During Enema, Pt. complaints for cramps, imp role of nurse

(i) Stop Enema & inform Dr.
(ii) document.
(iii) Stop & restart after subside condition
(iv) Slow the Infusion

* ↑se Freq. of cramps ⇒ Allow for defecation.

Flatus Tube ⇓ Indication ⇒ Remove flatus from colon.

- Insert Size ⇒ 4-6 inch.
- Check Effectiveness ⇒ Port of Flatus tube in a Pot ⇓
  ⇓
  Bubbles in Pot.
  • Chem ⇒ KMnO4 antiseptic (1:5000)
  • max time ⇒ 20 min. ⇒ Rat ⇒ Prevent stimulation of Vagus nerve/ulce

Oct. 6, 2022

Colostomy

Definition ⇓ Artificial opening b/w the colon.

Purpose ⇓ obstruction in colon.

E.g:- Tumor, Edema, obstruction, Carcinoma, paralysis.

Types. ⇓
① Wet colostomy
② dry "
③ Transverse "
④ double barrel colostomy.

1. **Wet Colostomy** ⇒ Performed / fistula in ascending colon.
   - Stoma create in right side abdominal wall.
   - Fecal material ⇒ Liquid form.
   - Temprory Colostomy ⇒ duration = 1-2 week.
   - ↑se chances of infection *
   - fluid & Electrolyte imbalance *

Q M/c complication of Wet Colostomy :-
(a) fluid & electrolyte imbalance
(b) infection
(c) body image disturbed
(d) Constipation

Q Imp. role of N.O. during care provide of a Wet colostomy pt
(a) Prevent fluid, elect^{r} imbalance
(b) prevent infection
(c) provide comfort
(d) None of the above

2. Dry Colostomy :- fistula create in descending (sigmoid) Colon.

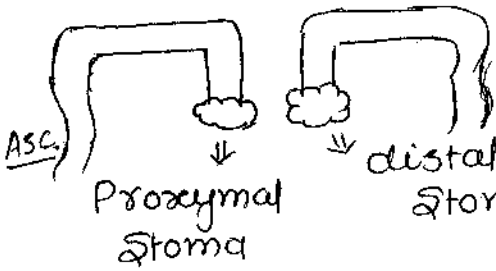
• aka 'End Colostomy'

- opening at left side abdomen wall.
- fecal material ⇒ normal 'formed' form
- Permanent colostomy.

3. Transverse Colostomy ⇒ Opening right side abdomen wa
- fecal material → Semi solid form.

4. ~~Double~~

4. Double barrel Colostomy ⇒ create 2 opening / fistula on abdominal wall



⇒ Colostomy bag apply at proxymal stoma
Fecal material out from proxy: stoma.

⇒ Mucosal stoma packed by dry gauge piece.
Gauze change when ~~wet~~ wet.

Q. M/c colostomy performed in clinical practice:-
(a) wet (b) dry (c) transv. (d) double barrel.
↓
less chance of inf.

Q at. least colostomy performed in clinical practice:-
Ans. double barrel colostomy (1 in 1000 pt.)

Procedure

→ Right Pt. identify.
→ Check consent
→ Articles.

(i) Betadine ⇒ 10% Povido iodine
Site / direction ⇒ Just below nipple to mid-thigh

(ii) Colostomy wafer / patch / flange / base plate.
gmp* Size ⇒ 1/3 inch large than stoma }

* Change the flange :-
- Immediately → when leakage, itching, burning sensation.

(iii) 1% Zinc oxide Powder : → apply under the flange.
- prevent microbes growth.
- Prevent burning sensation by HCl.

(iv) Colostomy bag :- apply on flange ring.

- Empty when 1/3rd filled ⇒ prevent rupture by flatus
- Change :- ① disposable ↓ 72 hrs. ② Reusable ↓ 1 wk.

Q. Clean the colostomy bag ⇒ 2% Gluteraldehyde / Cidex

Preparation

- Prepare the site
- diet modification ⇒ before 2-3 days
- Low fiber diet

⇒ Pre anesthetic checkup ⇒ Malampatti Examⁿ.

* Care of Stoma ⇒

⇒ Clean the Stoma ⇒ Outer to inner dirⁿ

Clean by ⇒ H_2O_2 + N.S. ⇒ non-irrigating solⁿ

Just after colostomy ⇒ if malodious/foul smell
⇓
* Normal finding for 72 hrs.
⇓
After 72 hrs. ⇒ if Malodious / foul ⊕nt
⇓
Inform the Dr. / Infection

Normal ⇒ Pungent smell.

Colour ⇒ Bright Red Colour (Normal)
- Pink Colour ⇒ also normal but predecided ⇒ anemic Pt.

Q. Normal colour of Colostomy Stoma in anemic Pt.
(i) Red (ii) Pink. (iii) Purple (iv) none.

* Blue Colour / Cyanotic / Purple / Violet ⇒
Nsg Priority ⇒ inform the Dr.
⇒ Cause ⇒ ↓se circulation
*⇒ Mgmt ⇒ Change the flange ĉ larger size flange

* Black Colour / dry Stoma ⇒ due to necrosis
Nsg Priority ⇒ inform the Dr.
⇒ Mgmt ⇒ Remove the affected area #

Diet modification
⇓
* first 24 hrs ⇒ only IV therapy
after 48 hrs ⇒ liquid
72 hrs ⇒ Semisolid ⇒ Peristalsis Start.

* Peristaltic movement ⊖nt after 72 hrs ⇒ inform the Dr.
(due to Paralysis.)

* Colostomy irrigation ⇒

Clean the Colon.

⇒ Colostomy irrigation start after 7 days.

⇒ Soln ⇒ Water ⇒ Temp. ⇒ 105-110°F *
'Luke warm Water'

⇒ Best time colostomy irrigation. ⇒ Early morning
⇒ 2-3 hr. after meal.

Max. time ⇒ colostomy irrigation in a day
⇓
3 Times.

⇒ >3 time ⇒ fluid & electrolyte imbalance

Q. Complications of colostomy irrigation ⇒ fluid & electrolyte imbalance

* Position ⇒ Sitting.
* Place ⇒ Bathroom

⇒ Tube insert in Colon ⇒ 3-4 inch]*
if >4 inch insert ⇒ ↑se risk of bleeding due to friction.

⇒ Provide regular psychological support (disturbed body image)

⇒ Allow for swimming bt ensure proper attachment of colostomy bag.

11-Oct-2022

Restrain

Prevent Self harm to Pt.

Policy :- Collect the consent from Dr.
also collect consent from Pt. / attender

- Restrain Consent Valid for ⇒ 24 hrs.

* Restrain continue ⇒ only for 2 hr.

* Restrain remove after 2 hr.

Q. During restrain, imp. role of nurse ⇒ Check Vital Signs. (Every 30 min.)

Q. imp. role of nurse during restrain
(i) Check BP. (ii) Pulse rate (IInd prior) (iii) Circulation (iv) Temp

⇒ After remove restrain imp. role of nurse ⇒ Check the restrain site. for injury.

Q A N.O: Check injury at restrain site, imp. role of nurse?
(a) inform Dr. (b) dressing at site
(c) documetation. (d) Re-restrain

* N.O. observe edema / swelling / redness / friction at restrain site ⇒ documentation.

* Gap b/w the restrains ⇒ 30 min.

Types ⇓
① Physical restrain
② Chemical "
③ Environmental "

1. Physical Restrain ⇓ Types:-

(i) Mummy Restrain ⇒ area ⇒ shoulder to pelvic cavity covered ∈ bandage.

• Indications ⇒ IV therapy through Scalp vein in newborn.
⇒ Stitches on face, neck or head.
⇒ Cleft lip & palate surgery

(ii) Elbow Restrain ⇒
Indication ⇒ ET Tube, NG Tube, Tracheostomy
⇒ Stitches on face in mentally ill Pt.

(iii) Wrist Restrain ⇒
Eg:- Cannulication in child (≤ 3 yrs)

2. Chemical Restrain ⇓
Induce for sleep (Sedation)
Eg:- Morphine Sulfate, Opoids.

3. Environmental Restrain ⇓ Change the unit of Pt.

12-Oct-22

O_2 Therapy

'Vital Gas' / Life Gas / Essential Gas / Supportive Gas

⇒ Colour ⇒ Colourless

⇒ Heavier Gas than other.

⇒ Odourless.

⇒ Press. in Environment ⇒ 150-160 mmHg

⇒ Press. in Human body ⇒ 80-100 mmHg.

• Saturation ⇒ Environment ⇒ 21% (O_2).

CO_2 ⇒ 0.3%

N_2 ⇒ 78%

⊖ Hb affinity ⇒ $O_2 < CO_2 << CO$.

20x more 200x

* During inspiration. O_2 ⇒ 21% CO_2 ⇒ 0.3%

* O_2 Exhale through breathe ⇒ ⊖ 16%

CO_2 ⇒ 5% (through metabolism/waste)

Q During CPR, Give O_2 through artificial breather-

(i) 21% (ii) 16% (iii) 18% (iv) 20%

⇒ CO_2 ⇒ CPR, artificial breath ⇒ 5% ##

⇒ 2 esp :- Env. → Lungs
- Lungs → Blood] ⇒ External resp.
- Blood → Cell ⇒ Internal resp

CO_2 ⇒ * In Visualization of Body Cavities.

Eg → Laproscopic Exam^n
Endoscopic Exam^n] ⇒ CO_2 Highly visualized gas in dark.

Q Gas used for Laproscopic Exam^n :-

(a) $CO_2 + O_2$ (c) $CO_2 + CO$

(b) $CO_2 + N_2O$ (d) $O_2 + N_2$

(i) CO_2. (ii) N_2O.

(iii) CO (iv) O_2

* Escape of CO_2 from Cavity =>

=> Nsg Priority => ① Ambulate the Pt. (ask Pt. to walk around)

after Exam^n/ Visualization.

② Suction

③ Massage in that area

④ Inform the Dr

N_2 / N_2O → Nitrous oxide "Laughing Gas"

- Indication => alveoli collapse => Inflatation.

=> Cryosurgery => Remove necrotic tissue/cells.

* Colour of Cylinders

- O_2 → 10% white, 90% black

Light. ↑ Heavy gas ↑

Coz. 10% Helium mixed c 90% O_2 for proper flow / pressure maintainance of O_2

- CO_2 => Green colour
- N_2O => Blue colour

Q. Colour of N_2O cylinder :-

(i) french blue (ii) Navy blue (iii) Royal Blue (iv) Sky blue

Indications

→ Hypoxia
→ Hypoxemia
→ Noisy Respiration
→ During breathe use assessory muscles
→ Breath by mouth.
→ Trauma, Brain injury
→ Post surgical, Anesthetic Pt.

Hypoxia

Q Early Indicator of Hypoxia?

Ⓐ Cyanosis. Ⓑ Restlessness
Ⓒ Irritate Ⓓ Confuse

Q. Early indicator of Hypoxia in unconscious pt.?

Ⓐ Cyanosis. Ⓑ Restlessness
Ⓒ Irritate Ⓓ Confuse

Site of Cyanosis

1. Nail buds ⇒ 1st site.

** Cyanosis site in Negro Pt. ⇒ Buccal Cavity.

Check Buccal Cavity ⇐ [Carbon Monoxide Measles
Spot (+nt) Cyanosis in Negro Pt.

Q device used for check O_2 saturation?

⇒ Pulse oxymeter.

Pulse oxymeter

Site ⇒ finger (index)
- Ear lobe
- forehead
- Tip of nose
- Chest
- Toe

Q. MIC site use for pulse oxymeter. ⇒ Index finger

Q Most convenient site for pulse oxymeter ⇒ finger

Q. Most reliable site for Pulse Oxymeter? ⇒ Ear lobe (Max. group of Capillaries)

Q. Change the Pulse Oxymeter site ⇒?

A Every 2 Hour (To prevent pressure sore)

Q. Sunlight on Pulse Oxymeter?

A Cover by Towel. (Prevent false reading)

Q. Imp. role of Nurse Before apply pulse oxymeter?

① Remove nail paint

②—

* Normal SpO_2 level = >95% (96-100%)

In COPD Pt. ⇒ 88-92%

Q. SpO_2 less than 86%, then first nsg priority?

⇒ Inform Doctor.

Q. Cout Dr. Prescription, N.O. delivery O_2 to Pt.?

⇒ 2L/min.

Q 2L/min also use in COPD Pt?

⇒ If (>2L/min) ⇒ * Bcz risk of Alveoli rupture

* Device use in COPD Pt. ⇒ Nasal Cannula

* Mask use in COPD Pt. ⇒ Venturi Mask.

* Invasive Method :—

ABG	VBG
- Blood taken from artery	- Blood taken from Vein.
- Colour ⇒ Bright Red	- Colour ⇒ Dark Red
- No need of withdrawl	- Need of withdrawl

Site :- (i) Radial artery ⇒ I st
(ii) Brachial artery ⇒ II nd (I st in Child)
(iii) Femoral artery ⇒ III rd

Q. MIC site for ABG analysis?
Ans. Radial artery

Femoral Artery :→ I st Priority in :-
⇒ Hypovolemic Pt. *
E.g :- Old age -
Burn -
Dehydration -
↳ fluid less.
E.g. Vomiting
Diarrhoea
- Severe ~~Haemorrhage~~
Hemorrhage

Q. A Burn Pt. came in Emergency and Dr. Priority for ABG analysis., the site for ABG?

(a) Radial
(b) Femoral
(c) Brachial
(d) None of the above

* Site for Premature / Neonate :- Heel Capillary

Test => Allen Test

Q Allen test for?

(a) ABG.
(b) Check the circulation of Radial artery
(c) Check the circ of Ulnar artery
(d) All of the above

* Articles :- Heparinized Syringe
↳ 2ml
Gauge => (23) 24, 25
↳ Ideal

* Heparinized not available
↓
2ml Syringe & flush by Heparin

* Heparinized Vial => Use for Heal Capillary Sample
↳ In premature / neonate

* Ice box => use :- for transfer of ABG Sample

Procedure → Angle for prick => 45° (I^st)
90° (II^nd)

- Sample collect & then send to lab ASAP in ice box (-20

• Analysis :- pH , O_2 , CO_2 , HCO_3^-

Q check the accurate O_2 conc. (SpO_2)

(a) Pulse oxymeter

(b) ABG.

O_2 Supply in ward ⇒ 2 ways.

① O_2 cylinder

② Wall-fitted

O_2 Cylinder

- pressure ⇒ 2200 pounds
- open in anticlockwise
- open key ⇒ 'Sphinex' key 

Wall fitted (latest)

main 2 circuits.

① O_2 Supply circuit.

⇒ pressure ⇒ 50-60 pound.

⇒ colour ⇒ white / white & Green

② Suction circuit/ Vacuum

- Yellow colour
- To remove mucus

⊙ Humidifier ⇒ To humidify the air

Adv. → Prevent irritation / dryness of mucosal memb.

- fluid used ⇒ distilled water
- Change every 24 Hrs.
- Clean c̄ 2% Gluteraldehyde
- aka 'Wolf bottle'

Devices

Q. M/c device for O_2 therapy in Clinical Practice?

(i) Nasal Catheter
(ii) Nasal Canulla
(iii) face mask
(iv) Venturi mask.

Q in Emergency ⇒ M/c device used for O_2 therapy ⇒ face Mask.

Face Mask

all masks ⇒ min. flow rate ⇒ 5 L/min

⇒ < 5L. can lead to suffocation

Q. All O_2 mask min. flow rate = 5 L/min except?

Ans. Venturi Mask (min flow ⇒ 2 L/min)

O_2 devices

- Nasal Canulla.
- Nasal Catheter
- Mask - eg Simple face mask,
  - Venturi mask.
  - mask c̄ reservoir bag
  - aerosol mask.

- Heat box (O_2 Hood)
- O_2 Tent
- ET Tube
- Tracheostomy Tube

① Nasal Canulla aka (Nasal Prong)

length ⇒ 1.5-2 cm.
flow rate ⇒ 1-6 L/min *
(M/C device used in Clinical Practice)
↳ Pt. comfort during O_2 supply.

Adv. ↳ no O_2 supply interrupt during eating, talking
↳ no risk of anxiety

*Procedure ⇒ Prong insert in both nostril & tube pass above ear pinna.
⇒ Dry gauge apply blw tube & ear pinna.
(To prevent pressure sore).

⇒ esp. used in COPD. Pt.

2. Nasal Catheter ⇓ Replace by nasal cannula

- Insert ⇒ Nostril to Uvula
- Flow rate ⇒ 1-4 Lt./min.
- Procedure ⇒ measurement → Tip of nose to Ear lobe
  - Lubricate → 2% xyloeaine Jelly
  - Change / Replace ⇒ Every 8 hour.

3. Face Mask ⇓ (1) Simple face mask ⇓

- Transparent
- flow rate ⇒ 6-12 L/min
- min. flow ⇒ 5 Lit/min. (<5 L/min cause suffocation)

- M/c use in Emerg.
- Avoid oral Temp.

(ii) Mask & Reservoir bag :-

Types :- (1) Non-breather
(2) Partial re-breather

(1) Non-rebreather mask - one way valve

- Flow rate ⇒ 10-15 L/min.
- min flow ⇒ 10 L/min
  < 10 L/min ⇒ Reservoir bag deflat
- flow FiO_2 ⇒ >90%.
- max O_2 conc. device
- capacity of reservoir bag ⇒ 1 Litre
- inflate ⇒ complete inflate

(2) Partial re-breather mask ⇒ mix gas supply (device)
- valve - two way

- indication ⇒ O_2 Toxicity Patient.
- flow rate ⇒ 10-15 L/min.
- min. flow ⇒ 10 L/min
- conc. of O_2 delivery ⇒ 60-70%.

⇒ Avoid at ent time

(iii) Venturi Mask :- Accurate O_2 deliver device

- Indication ⇒ O_2 toxicity Pt.
- minimum O_2 delivery mask (2L/min)

* Types :- a/c to Colour

	Colour	fiO_2	O_2 flow
1	Blue	24%	2 L/min
2.	White	28%	4 L/min
3.	Orange	31%	6 L/min
4.	Yellow	35%	8 L/min
5	Red	40%	10 L/min
6.	Green	60%	15 L/min

(iv) Heat box (O_2 HOOD)

- Use :- Neonate
- Burn → (Face & Neck burn)
- flow rate → 6-12 Lit/min
- Clean ⇒ 2% Gluteraldehyde

(v) O_2 Tent :- - use ⇒ Burn (complete)

Rat. ⇒ ↑se cellular metabolism

⇓

↑se cell division

⇓

Wound Healing fast

- flow rate ⇒ 10-12 Lit/min

(vi) Aerosol Mask :- indication ⇒ nebulization

- flow rate ⇒ 6-12 L/min
- Clean :- 2% Gluteraldehyde

Medical and Surgical Asepsis.

Asepsis ⇒ Free from infections.

Terminology :—

(i) Bacteriostatic ⇒ drug used to inhibit the growth of Bacteria ∴ out kill.

(ii) Bacteriocidal ⇒ drug used for inhibit the growth of Bacteria ∴ kill.

(iii) Bacteriostasis ⇒ use ⇒ culture
⇓
Growth

→ All T.B. drugs are Bacteriocidal except Ethambutol (Bacteriostatic)

(iv) Carrier ⇒ Ag. enter in Host but dont show S/S.
⇓
But the Host is able to transmit disease.
Eg Hemophilia.

(v) Disinfection ⇒ In this process, pathogens, non-patho-micro-organisms killed ∴ out spore.

Types :- ⓐ Terminal disinfection
⇓
Pt. article disinfected after discharge or death.

ⓑ Concurrent disinf
⇓
Pt. admitted in the Hospital ∴ clean the articles (disinfection)

Q. Change the unit of Pt., Type of disinfection?
Ans. Con-current disinfection.

- disinfectant ⇒ Chem. use for destroying the pathogen & non pathogen micro-organism.

* Route of Infection

(i) Direct Route
⇓
Ag direct contact ∁ Host.
E.g:- Droplet, Contact

(ii) Indirect route
⇓
Ag transmitted throug mediator.
E.g:- Iatrogenic Inf.
(By mistake of false procedure)

⇒ Droplet nuclei:- during sneezing or coughing.

⇒ Feco-Oral Route :- Through feaces.

⇒ Vertical Route :- Through Placenta

* Nursing Barrier
⇓

⇒ Wearing steps :- ① Cap.
② Mask
③ Hand washing
④ Gown
⑤ Gloves.

⇒ Removing steps
⇓
(i) Gloves
(ii) Gown
(iii) Hand washing
(iv) Cap.
(v) Mask.

Gloves ⇒ First wear ⇒ Dominant Hand ← First Remove
Then → Non-dominant Hand ← Then

Resp. Barrier ⇒ only mask

Q. A Pt. admit under droplet nuclei infection ∄ N.O. provide meal tray; NO. use of Barrier?
⇒ Only mask.

- HEPA Mask ⇒ High efficiency Particulate air
- N95 ⇒ Special use in Swine flu.

* Wound Barrier ⇒ All Nsg. Barrier use
  → Technique ⇒ Sx technique ⇒ I^st priority
  Aseptic clean technique ⇒ II^nd priority

* Blood Barrier ⇒ Mask & Gloves.
  - Sx technique use

gmp
* Hand Washing :- Movement of Handwashing.
  ① Before touching Pt.
  ② After touch Pt.
  ③ Before & After Procedure
  ④ Surrounding of Pt.
  ⑤ Body fluid contact of Pt.

Type of Hand Washing ⇓
① Medical H.W.
② Surgical H.W

1. Medical / Routine Hand Washing ⇓
• Purpose ⇒ during assessment
E.g :- Physical examination
- Vital Signs.

- All Physical examination through Medical H.W. Except Rectum & Vaginal.

⇒ Soln ⇒ ① Liquid Soap & Water
② Spirit (70% Isopropyl alcohol)

Quarantine, Isolation, Screening, diagnosis ⇓ Secondary LOP.

Time :- 3-5 min

At least time :- 20 sec

Alc to Solution :-

Soap + Water ⇒ 40-60 sec

Sprit ⇒ 20 sec

Direction :- aka ⇒ Water flow dirⁿ ⇒ Elbow to Palm.

Q Water flow dirⁿ after / during Medical H.W ?

⇒ Elbow to Palm.

• Step ⇒ New Guideline ⇒ 6 steps.

2. Surgical Hand Washing

⇓ Purpose :- Before every Procedure

E.g :- Before Sx ; Catheterization
- Wound dressing.
- Vaginal Examination
- Rectal Examination
- Intubation
- NG Tube insertion.

Solution ⇒ 7.5% Povido Iodine (± foam ⊕)

aka 'Scrubing solⁿ

Time :- 10 min

At least ⇒ 60-120 sec

Q. At least time for Sx Hand washing?

Ⓐ 60 sec Ⓑ 90 sec Ⓒ 120 sec Ⓓ 180 sec

⇒ dirⁿ Palm to Elbow.

** Level of Hands after Sx Hand Washing

⇒ Above the wrist.

⇒ Steps ⇒ 8 step.

** Imp. Neg Barrier for break the chain of Infection.

⇒ Hand Washing.

Q. Imp. ~~steps~~ Steps of Hand Washing?

Ⓐ Time Ⓑ Steps Ⓒ Solution Ⓓ Friction

⇒ due to Heat production, normal flora is destroyed.

Sterlization

In this process, pathogenic & non-pathogenic micro-organism are killed & spores.

Method

① Steam under pressure sterlization. (Moist Heat)
② Dry Heat Sterlization (Hot air oven)
③ Fumigation. (Gas sterlization)
④ Cold Sterlization (chemical)
⑤ Radiation Sterlization
⑥ Physical sterlization (Boiling)
⑦ Tindelization
⑧ ETO Method.
⑨ Eco-Shield.

Q MIC method for sterlization in clinical practice?

⇒ Autoclave

Q Most effective method for sterlization?

⇒ fumigation.

- Temp ⇒ 121°C ✓
- Time ⇒ 15-20 min
- Press ⇒ 15 lbs / inch²

1. **Autoclave** :- aka - 'Steam Under Pressure'
   - 'Moist Heat Sterlization'

* M/c method used in Clinical Practice.

Rational :- Cheapest & effective.

* All Reuse articles / instruments ⇒ Sterlization
  except ⇒ Rubber & Plastic articles.

* Reuse Gloves Sterile by Autoclave.
  ⇓
  Dusting Powder used during Sterlization.

* Store instruments ⇒ Only upto 1-2 Weeks. *
  after that Re-Sterlization.

⇒ Check the effectiveness of Autoclave ⇒ Dick Test.

- Tape used ⇒ ① Yellow colour ⇒ Black colour ⇒ Autoclave effective
  (Dick test ⇒ ⊕ve)
  ② Pink colour ⇒ Brown colour ⇒ effective ↑

2. **Dry Heat Sterlization** :- aka - 'Hot air Oven'.

Use :- M/c used at industrial areas.

- Articles :- Sharp metal instruments. eg :- needle, metal cannula Scissor.
- Glass syringes, test tube, slides.
- Vaccines. (Powder / Serum)
- Antiseptic powder.

3. Radiation :- Hot air oven: ↓ [Temp. ⇒ 160°C for 1 hr.]

⇓

Gamma Rays are used. (I)

also UV Rays are used. (II)

- all rubber & plastic instruments are sterlized through Radiation.

E.g I/V set, B/T set, Blood bag, droppers., Surgical blade*

* Heart Valve (Metallic & biogenic)

- NG Tube, Catheters., E.T. Tubes, Tracheostomy (Plastic)
- Plastic disposable syringes.

4. Physical Method :-

(i) Boiling
(ii) Sunlight.
(iii) Burning.

(i) Boiling Method ⇒

* indications :- metal tracheostomy tube (inner cannula)
- Feeding bottle
- blunt articles

⇒ Temp. ⇒ 100°C

⇒ Time ⇒ 15-20 min.

⇒ Heat ⇒ Moist Heat

* ⇒ Avoid sharp articles bcz ⇒ blunting / shape changes.

⇒ Mostly used in domestic areas.

⇒ for purifying water.

(ii) Sunlight :- indications - linens, blankets.

Time ⇒ 2 hours.

5.* Fumigation (Gas Sterlization) ⇒ Most effective method For Sterlization.

- Indications ⇒ O.T., ICU, Wards, Labs.
  ⇓
  O.T. sterlization ⇒ after every surgery

- Chemical :- ① Sulpher Powder
  ② Formaline liquid
  (amount a/c to area (100 cubic feet))

⇒ Sulpher Powder amount ⇒ a/c to area (100 ft^3)
↳ 220 gm + 500 ml water + 10% Spirit.
⇓
Sulpher dioxide Gas. (SO_2)

- duration :- 12-24 hrs.
- complication ⇒ Burning sensation in Eye. ⇒ ..
  ⇒ Itching.

* Sprit is added to prevent burning sensation & itching
⇒ Rarely used in Clinical Practice

⇒ Formaline Liquid :- 140 gm $KMnO_4$ crystal
+ Liq. formaline (250 ml)
⇓
Formaldehyde Gas. **

- duration :- 12-24 hrs
☺ Mostly use in clinical practice.

⇒ 6. ECO-SHIELD Method ⇒ Environmental-friendly method
⇓
* Latest use in clinical practice. (OT, ICU, etc)
* Chem used ⇒ H_2O_2 + $AgNO_3$ *
* duration ⇒ 30 min.*

-fumigation's alternative ⇒ Eco-shield

7. E.T.O. Method (Ethyl Trioxide) :-

⇒ Latest use in clinical practice

⇒ Articles use - disposable plastic syringes
- Plastic Tracheostomy tube
- E.T. Tube
- Sterile Gauze
- Suture

Radiation method's alternative ⇒ E.T.O.

Adv :- ** Use 6-12 months. but kept unopened.

Q. E.T. Tube sterile by :-
(a) Radiation (2nd Priority) - (b) E.T.O. ⇒ Ist

8. Cold Sterlization aka ⇒ 'Chemical Sterlization'

* MIC Chem. used for Sterlization ⇒
(a) H_2O_2 (b) Beladine (c) Spirit. (d) $KMnO_4$

⇒ Betadine ⇒ Povido-Iodine 'Paint the Site'

⇒ 2.5% Povido iodine ⇒ Mouth Gargles.
↳ dilute 2.5 ml of in 1 Glass water.

Idic · Indications ⇒ Resp. communicable disease
- diptheria ('Sick test')
- mumps.

* Pt on steroid therapy - organ transplant

⇒ 5% Povido-Iodine ⇒ used in dressing
⇒ 7.5% " " ⇒ Sx hand wash.
⇒ 10% " " ⇒ Clean Surgical site

⇒ Allergy by Betadine ⇒ Sol^{n} used ⇒ Chlorhexadine*
(uprued by W.H.O.)
Same conc as Betadine

Q Allergy by Povido-Iodine, then use chem.?
(i) $KMnO_4$ (ii) H_2O_2 (iii) Savlon [IInd] (iv) Chlorhexadine - Ist priority

* H_2O_2

Use :- Clean inner wall of outer cannula.
- Pus ⊕nt ⇒ Wound, ear, oral cavity etc
- Mouth Gargles ⇒ 1:8

* Mercury spill on floor.
E.g:- Thermometer Break. ⇒ Nsg Priority :- ① Restrict all activity in ward.
② Lights off. Window, door ⇒ closed.
③ Mercury collect by help of dropper.

* Mercury spill in large area :- ⊕ Inform the HAZMAT (Hazardous Mgmt Team)
(sphygmanometer break) ⇓ Moping of floor ē H_2O_2*

* 1% Sodium Hypochloride ⇓ use for HIV Pt.
- instruments use in HIV Pt. ⇒ Sterlization by 1% Sodium Hypochlorite.
- HIV Pt's blood removed from clothes ⇒ 1% Sodium Hypochlorite
- from floor ⇒

* Cidex {2% Gluteraldehyde}
• use :- all instruments (Metal, Rubber, Plastic) sterile by 2% Gluteraldehyde

Eg:- Endoscopic tube
↳ 30 minute soak in 2% Glutaraldehyde before use

** all scopic tubes are steriled by 2% Glutaraldehyde. for 30 minutes.

→ Change 2% Glutaraldehyde every 7 days.

* Savlon ⇓ composition ⇒ Chlorhexadine + Spirit + Cresol

• Use :- Sterlization of Thermometer (1:20)
- Steril[2] of Cheatal forceps. (1:100)
⇓
To Hold Sterile items.
- Prepare the part before Surgery. (1:100)
⇓
In Ward / Unit

⇒ Change the Savlon in - 7 days.

Eusol ⇓ prepared.
- composition ⇒ Bleaching powder (12.5 gm) + Boric acid (12.5 gm) in 1000 ml water. ⇒ Eusol.

• Use :- for Wound Irrigation (Gram ⊖ve infection Wound) (DM Pt)
Eg:- Pseudomonas inf.

KMnO4 ⇓ • Use :- Mouth Gargles (1:5000)
- Urinary bladder irrigation (1:5000)
* Sitz bath (1:10000)
- Colostomy irrigation (1:10000)

Sprit ⇓ 70% Isopropyl alcohol.
✓- Quickly sterile the site (0.5 sec)
- Before injection - clean site.

Eg:- before Insulin clean site ⇒ Sprit.

Lysol ⇒ Moping the floor.
⇒ Cleaning the Mackintose sheet ⇒ by Lysol.

Packed Foods - Sterlized by Tyndallization.
- Heat used ⇒ Dry, used.
Heat.

Vital Signs

aka ⇒ Cardinal Sign
aka ⇒ Life Sign

Vital ⇒ Temp.
- Pulse
- Resp.
- Blood pressure
- Pain
- O_2 saturation

Sequence of Vital Signs in Adults ⇒ T, P, R, BP, Pain, SpO_2

- in Neonate/ at Birth ⇒ Resp. - pulse - Temp.
- in Infant/ Late Neonate/ Toddler/ Adult ⇒ Same as adult.

⇒ 5th vital sign ⇒ Pain.
⇒ 5th Vital sign in Emerg ⇒ SpO_2.

1. Temperature :- Temp. regulatory center ⇒ Hypothalamus
Hypothalamus
(i) Ant° Hypoth. ⇒ ↓↓ Bodytemp.
(ii) Post° Hypoth. ⇒ ↑↑ Bodytemp

Ⓐ Thermogenesis ⇒ ↑ Body Temp by chem. regulation

Ⓑ Thermolysis ⇒ ↓ Body Temp. by physical regulation

Thermogenesis

Eg:- ① Food oxidation (i) 1 gm CHO ⇒ 4Kcal.
(ii) 1 gm Protein ⇒ 4Kcal
(iii) 1 gm Fat ⇒ 9Kcal.

② Specific Dynamic action (SDA)

1 gm CHO ⇒ 4%
1 gm Protein ⇒ 30% Mix diet ⇒ 12%
1 gm Fat ⇒ 4-6%

③ Anxiety ⇒ Temp. ↑ (due to Hormone / Emotional Effect)

④ Exercise ⇒ ↑ Temp

⑤ Hormone change / Release ⇒ Temp. ↑es.

Thermolysis

Eg:- Body Temp. ↓es.

⇒ ① ↑se Body Temp.
⇓
Blood Temp. ↑es ⇒ Blood contact ∈ Hypothalamus
⇓
↓es body temp
⇓
Vasodilation (peripheral)
⇓
↑ Blood Circulation

② ↓se body temp ⇒

Eg:- Conduction ⇒ Heat directly transfer from one object to another object.
- one object in direct contact ∈ another object.

Eg:- Handshaking.
Sponge Bath.
⇒ Heat loss ⇒ 3% (min. Heat loss)

Convection ⇒ depend on atmosphere
- body temp. ↓se due to air circulation

E.g:- Running Fan.
Heat loss ⇒ 13%

Radiation ⇒ Heat transfer from one object to another object, but both objects not in direct contact.
- Sun light through glass.

Heat Loss. ⇒ 60% (Max)

Evaporation ⇒ Liquid changes in Vapour.
Heat Loss. ⇒ 22%

Site of Temp.
① Oral
② Axilla
③ Rectal
④ Tympanic membr (Ear)
⑤ Forehead.

Q. M/C site for Temp. ⇒ Oral (no need of any privacy)
Q M/C site in Child ⇒ Axilla
Q. M/C site in mentally ill Pt. ⇒ Axilla
Q Most Reliable site for temp. ⇒ Rectal
Q Most frequent site for temp ⇒ Tympanic membr (Ear)

* Differences b/w Temp. a/c to site :-
- Oral route ⇒ 98.6°F.
- Axilla ⇒ 97.6°F.
- Rectal ⇒ 99.6°F (Core body temp)

⇒ diff b/w Oral & axilla ⇒ 1°F.
⇒ " " Oral & rectal ⇒ 1°F
⇒ " " Axilla & Rectal ⇒ 2°F

1. Oral Route/Site
⇓
M/C site used in clinical practice
Normal Temp. ⇒ 98.6°F.

- if Pt. took cold coffee, Hot tea, Hot Water, bath, food.

⇓

then avoid temp.

↳ wait for 15-20 min. ✓

Procedure

→ Clean thermometer ~~from~~ before bulb to stem ⊂ dry gauze

after stem to bulb → Sprit gauze

- Place the thermometer :- below tongue (III)
  - Site of frenulum II
  - Sublingual pocket Ist

⇓

- Give instruction to Pt. ⇒ thermometer Hold by help of lips

(avoid use of teeth ⇒ may break.

⇓

- 2-3 minutes.
- digital thermometer ⇒ remove after beep.

* Check mercury level before using thermometer

⇓

35°C / 95°F.

* if mercury level more than 35°C/95°F :- Imp. role of nurse

⇒ Shake the thermometer

* Check thermometer :- at Eye level.

distance b/w Eye & thermometer :- 1-1.5 ft.

C/I :- ① Child ② Mental Hl Pt. ④ Unconscious.

③ Oral Cavity Sx

⑤ Oral Cavity infection ⑥ O_2 therapy via mask

⑦ Frequent cough.

Eg:- Resp. communicable diseases

diptheria, T.B., pertusis

⑧ dehydration

② Axilla Route :- Mlc used in child.

- Normal temp. :- 97.6° F.
- Direction of Thermometer ⇒ Vertical.

* Hair Growth in Axilla ⇒ Avoid temp.

- Sweating in Axilla / Excessive Sweating ⇒ Wipe the axilla c̄ wet gauze/ towel (plain wate

· Site :- Mid-Axilla.

· Time :- 3-5 min, digital- Beep.

③ Rectal Route - most reliable site (Rat :- no contact c̄ environ. & rich blood supply)

- normal temp :- 99.6° F (core body temp.)

→ Procedure ⇒ provide privacy.
position - Sims- lateral position (I)
Left- lateral " (II)

- Clean site c̄ wet gauze (plain water)
- Instruct :- Exhale by mouth & Hold (Anal sphincter relax
- use 2% Xylocaine jelly (lubrication & anaesthesia)
- insert - size - alc to age group.
  - neonate :- avoid
  - ✓ infant :- 1.5 cm.
  - ✓ child :- 2.5 cm
  - ✓ Adult :- 3-4 cm.
- thermometer Hold by N.O.
- time :- 1-2 min, digital- beep.

* After death, Check body temp ⇒ through Rectal route
→ avoid oral (stiffening)

CI :- ① Cardiac Pt. ⑤ Rectal Sx ⑥ frequent cough
② Hemorrhoids. ⑦ dehydration
③ ✓ Hemophilia / bleeding disorder
④ diarrhea. (thrombocytopenia, abnormal PT, CT, BT)

④ Tympanic membr :- Ear - frequent site used for temp ⇒ 2-3 sec (quick) ↳ Core body temp.

* Frequency of Temp. in clinical Practice :-

① Routinely ⇒ B.D.
② Fever ⇒ Every Hour.
③ During Blood Transfusion ⇒ 15-30 min
④ during restrain ⇒ every 30 min

* Alteration of Body Temp.

↑ Body Temp. / Fever @ / Pyrexia ⇒ a|c to Route

- Axilla :- 98°F.
- Oral :- 99°F.
- Rectal :- 100°F

* Post Sx / Procedure :- After every Procedure / Sx esp. Labor during / after Labor ⇒ normal finding.

up to 100.4°F ***

>100.4°F / Fever → inform Dr.

Types of fever

① Fastigium fever :- Body Temp. ↑es and peak at end of day — aka 'Stadium fever'

② Rigor ⇒ Ent in malaria

↳ stage :- ③ (a) Cold
(b) Hot
(c) Sweating stage

⇒ Cold Stage :- First stage :- Pt. complaints for shivering

- Nsg priority :- provide blanket.
- provide Hot coffee, tea, water

⇒ Hot Stage :- 2nd stage ⇒ Temp. ≥ 103°F.

- Nsg priority :- Remove blanket
- remove extra cloth
- provide cool environment

- Cold sponge bath. (temp. 85°F) ⇒ Head to Toe.
  ↳ indication :- temp. ≥ 103°F. * but avoid chest / trunk bcz risk of pneumonia.
  ↳ duration ⇒ 20 min only / sponge bath stop when body temp reaches 101°F.*

⇒ Sweating stage :- Wipe the sweat & change bed sheets, clothes.

- Start IIV therapy (to counter fluid loss)

③. Crisis :- Suddenly ↓se the Body temp.
~~Lysis~~

- ☺ True crisis ⇓ ↓se body temp & improvement in Health
- False crisis ⇓ ↓ Body Temp but no improvement in Health.

Lysis :- Gradual ↓se in body temp.
- body temp. ↓se in Zig-Zag method.

④. Inverse fever :- Body Temp. High in morning & Low in Evening
⑤ Intermittent fever :- ↑se Body Temp. in Gaps.
- Body temp. ↑se in steps.

⑥. Continuous fever :- Body Temp. ↑se 2°F or less. and continous
- mostly seen in Viral Infections.

⑦ Constant Fever :- Body Temp. ↑se 2°F and constant.

* ✓ Hectic fever :- diff b/w Highest & Lowest Temp.
* ✓ Hay fever :- in allergic condition.
* Scarlet fever :- specific in Tonsilitis, phazyngitis
* Black Water fever :- Black-colour Urine / Brown-colour urine
  ↳ Esp. in ~~Urine~~ malaria
- Relapse fever :- Progression in Health of Pt.

* Changes in Body Systems due to ↑sed Body Temp

① Cardiac ↓ ↑se Pulse rate / cardiac activity. (O_2 consump. / ↑ metabolism ↑ demand ↑)

1°C Temp ↑ ⇒ 10. Pulse ↑

② Resp 1°C. ↑ = 4 Resp./min ↑

Ratio :- T : P : R

1°C : 10 : 4

⇒ O_2 consumption ↑ed :- * 1°C Temp. ↑es than 13%

* 1°F " " 7% O_2 consump

③ G.I. maybe constipation / diarrhea

- but mostly in clinical practice ⇒ constipation.

④ Renal. ↓se urine output.

2. Blood Pressure :-

- Normal :- 120/80. mmHg.
- Pulse pressure = 120 - 80 = 40.

* Method :- ②

→ Auscultation ⇒ M/C method use in Clinical practice.
↓
Check both SBP & DBP.

→ Palpatory
↓
only check SBP.

* Articles → ① B.P. Cuff ② Sphygmomanometer ③ Stethoscope
↓

→ Cuff circumference :- 30% larger than arm circum.

→ 2/3rd area cover

→ Site :- both arm but mostly use left.

C/I / Avoid :- IV therapy, Blood Transfusion, fistula, Burn, Cast, fracture, Paralysis, Mastectomy*

• Procedure

① Position :- (I) supine > (II) sitting

⇓

apply B.P. cuff :- distance b/w B.P. cuff and Brachial ⇒ 2.5 cm_2

⇓

Check the mercury level ⇒ zero.

⇓

*if > 0/1 ⇒ ① deattach. BP. cuff.

② deflat B.P. cuff

Nsg. Prior.

⇓

level of Sphygmomanometer :- at Eye level

*dist. b/w Sphymo. & HCW (N.O.) ⇒ 2.5 feet.

⇓

Inflate the B.P. cuff unTill Brachial sound disappear.

⇓

than advance 30-40 mmHg flat.

⇓

deflate the cuff (Relieve pressure)

↳ 2-3 mmHg / sec *

⇓

auscult. first sound ⇒ 'Korotkoff Sound

↳ Systolic BP.

⇓

last sound - 'Muffling / Muffle sound'

⇓ ↳ diastolic B.P.

then relieve pressure

* re-check B.P. :- Gap :- 5 min.

• Imp. points :-

⇓

Abnormal size B.P. cuff :-

① Wide cuff :- false & low B.P.

② narrow / short cuff :- false & High B.P.

③ Loose applied :- false & High B.P.

④ Hight :- false & Low

- If adult cuff apply on child (wide) - Low
- If child cuff " " adult (narrow) :- High

**
⇒ deflating cuff too slowly :- false ↑ High diastolic B.P.
⇒ relieve pressure quickly :- false ↓ low systolic &
false High diastolic B.P.

**
⇒ Level of extremity during B.P. assessment:-
↳ Level of HEART.

if extremity level below the Heart ⇒ False B.P. & High B.P.
" above " " :- " & Low B.P.

3. Pulse.

- Site :- artery crossing the bone, near upper surface | skin (superficial)
- Time :- 60 sec (pulse)
  - check circulation :- ⑤ - 10 sec. → Prior.
  - M|C site for pulse - Radial.
  - M|C site for circulation :- carotid
  - Use fingers for :- pulse : ③ fingers* (③ characters of pulse) Rate, Rhythm, volume
    " " circulation : ② "

* Avoid use of thumb.

Quality no. (0-4) of Pulse :- normal pulse : ③

* Check circulation during CPR :- complete 5 cycle /* after 2 minutes

Site :-

* → accurate site for pulse in neonate ⇒ Apical pulse
or infant/
pre mature

* → In emergency, pulse checked ⇒ Facial pulse

Site for Pulse

① Temporal above temporal bone (Lateral aspect of eye.)

② Carotid. To check the circulation. Time (5-10 sec)
↳ checked mainly in unresponsive patient. ⇒ felt @ Sterno
↳ checked during CPR. (circulation). Clado-mastoid muscle

③ Facial ⇒ 'angle of Jaw' ⇒ 'check in Emergency'

* ④ Apical ⇒ site: apex of Heart. / 'Mitral valve'
- accurate :- 4th - 5th IC space @ left mid-clavicular li

⇒ 3-4 inches left from midline @ 4th - 5th ICS.
- below the nipple ; mid-clav. line (male)
- below the breast. (female)

⇒ during Preg" if nothing mentioned ⇒ 4th ICS
* but acc to TMs. :- I :- 5th ICS.
# IInd, IIIrd TM :- 4th ICS.

→ * in child (upto 8 yrs) ⇒ 4th ICS.
or neonate / infant

⇒ Check pulse deficit :- diff b/w apical & Radial pulse
Eg:- AP :- 90. RP ⇒ 70 -or. 2 apical & Radial 1.

⇒ Apical most accurate site :- in neonate & infant.

⑤. Braehlal ⇒ ant^{r} side of elbow / Anti-cubital fossa

- use :- during B.P. measure ⇒ auscultation.
  - check circulation in neonate & infant
  - also use for ABG sample collection.
  - Blood exchange in Rx of Jaundice.

⑥ Radial :- MIC site for pulse in clinical practice.
- Routinely check.

use :- ABG sample collection.

⇒ Time ⇒ 60 sec.

⑦ Ulnar :- for circulation

↳ Catheterization in Radial artery ⇒ Ulnar checked ⇓ To check the patency of ulnar ∠ 'Allen Test'

⑧. Femoral :- Check the lower extremity circulation.
- ABG Sample collection
- Cardiac catheterization / Angiography

* after cardiac catheter. check lower extremity circ.
↳ post^{r} Tibial artery

- after cardiac catheter. check the patency of femoral
↳ post^{r} Tibial artery.

⑨ Poplitial art :- use :- * To check DVT.

also use :- B.P. ⇒ diff. b/w. upper ext^{r}. BP & Lower ext^{r} BP :- mainly change in SBP.

** ↑se 30-40 mmHg (SBP) > Upper B.P

⑩. Post^{r} Tibial art :- Check the patency of femoral

* 11. Pedal artery ⇒ To check circulation after applying lower extr cast (fracture)

* Quality of Pulse :- no. :- 0-4

0+ ⇒ absent pulse :- after death.

1+ ⇒ Wire like " :- SHOCK.

2+ ⇒ Weak pulse :- dehydration ;- Hypovolemia, Hemorrhage diarrhea.

3+ ⇒ normal :- rate, rhythm, volume ⇒ normal.

4+ ⇒ Bounding pulse :- Hypervol., circulatory overload during Blood Transfusion

* Characteristics of Pulse :-

Rate :- normal :- 60-100, neonate / PM :- 120-160

Types

① Water Hammer pulse / Corrigan pulse / collapse pulse

⊕nt in aortic regergitation ⇒ full volume bt rapidly collapse (back flow into LV) ∵ press. Aorta > LV.

2. Bounding pulse

↑se in stroke volume, seen in exercise, anxiety, anemia, hepatic failure, card. overload, Hypervolemia.

3. Pulse alterans :- mainly ⊕nt in left ventricular failure

↳ irregular rhythm, bt: volume has alternative strong & weak character. #

Pain - Subjective vital sign.*

↳ 5th Vital Sign (only in conscious)

5th Vital Sign in Emergency :- SpO_2

⇒ Check the Pain :-

• Tools :- Visual analogus Scale (VAS) ⇒ check facial expression (only in conscious)

- use in adult & child.

→ for neonate ⇒ NIPS. (Neonate Infant Pain Scale)

⇓

FLACC

- F :- check the facial expressions
- L :- check leg movement.
- A :- " Activity
- C :- " Crying.
- C :- Check posture

⇒ M|C scale used for pain ⇐ Scale used for adults in clinical practice

⇓

'Wong Baker Scale'

⇒ aka 'Face Scale' - check facial expressions ⇒ no.

⇒ 0-10. no.

number :-	category
1-2	mild ⇒ dull pain → seen in T.B.
3-4	moderate
5-6.	severe
7-8.	Very severe
9-10.	worst (labor)

⇓

Ag-Ab rxn

⇓

Lungs parenchyma

⇓

granules → ulcer

⇓

necrosis

⇓

Gohn tubercles

⇓

Calcification / patches

Mgmt of Pain ↓ 2. Types:-

① Pharmacological Mx

② Non-pharma Mx ↓

* Diversion Therapy ↓

- acc to age -

① Child :- cartoons. (old) < Video games ↓

② Adult :- T.V., movie, music → (latest)
dance → By. N.O.

Application ↓

Hot and cold application :-

↓

E.g. Sitz bath. (110-115°, 20min)

↓

- after perineal surgery — after 24 Hrs.
- after delivery.
- after hemmorhoidsx

⇒ fn. on Vasodilation

Cold app. :-

- Vasoconstriction &
- Suppress nerve supply.

Eg:- appendicitis,
nose bleeding.

• Appendicitis:- position:- Rt. lateral C knee flexed. *

→ appendectomy ⇒ " - dorsal recumbent. *

(abdominal muscles ⇒ relax for wound prevention)

• Exercise ⇒ if pain ↑se ⇒ stop exercise

* Yoga.

Respiration

- normal resp.:- 12-20 (I)
  16-20 (II)

- Characteristics:- ① rate :- 12-20 / min
  ② rhythm
  ③ volume
  - deep → ↑ Tidal vol.
  - Shallow → ↓ T.V.

Types

① Strider resp :- aka 'Wet resp./breathing' - 'noisy resp' - 'Emergency resp'
↳ upper airway inflam.

② Cheyne stroke resp. aka 'Intermittent Resp'
↳ due to overdose of opoids. (CNS depr)
↓
↑se depth of resp. but ↓se rate of resp.
(↑ T.V.)

③ Biots Resp.:- seen in Brain injury (Medulla ob. injury)
↳ deep resp. c̄ regular apnea.
(↑ depth)

④ Yoga Resp. / Sign resp' ⇒ Gap btw breathing -

⑤ Bubbling / Rable resp. ⇒ ⊕nt in pneumonia#

Wound

→ Breaking down of integrity of skin.

Types

① Open wound :- break down integrity of skin & involvement of mucosal membrane
- Break down epidermis & dermis

② Close wound - Injury of tissue* (breakdown of tissue under the skin)

↳ *Early sign :- Echymosis (bluish colour) & edema.

⇒ Septic Wound :- cause :- unexpected Trauma.
↳ infection chances :- Higher / ↑ed
↳ Healing :- Slow
↳ Edge of wound ⇒ Irregular

⇒ Aseptic Wound :- create by experienced surgeon.
↳ inf. chances :- reduced.
↳ Fast Healing.
↳ Clean / regular edged.

⇒ Both are involved in Acute wound.

⇒ Puncture Wound :- due to needle-stick injury
* needle stick injury mostly in Health care worker / N.O.

Stages of Wound Healing

(4)

1. Inflammatory Stage :- 'Hemostasis Stage'
↳ duration → 24-48 hrs

S/S :- ① pain
② redness
③ Edema
④ Warmth

* Hemostasis. ⊕nt in inflammatory stage

2. Proliferative Stage :-
   - cell division → starts
   - Wound Healing ⇒ starts.
* - duration :- 3-5 days.

3. Fibroblastic Stage :- duration :- 2-4 weeks.
   - starts. :- 4th day ⇒ 2-4 wks.
   - Formation of tissue. (connection b/w tissues)
   * Complete wound Heal.

4. Re-modeling Stage / Maturation Stage :- 6-12 months.
   ↳ colour changes of wound. (like previous)

Complications :-
1. Keloids. ⇒ overgrowth of wound.

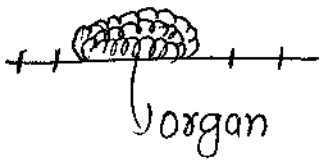
2. Wound Evisceration / 3. wound dehisence :- ← 'Acute Wound' Types
   * only abdomen cavity

** Early indication :- Pink or Red colour dressing (during change)

* Nsg. priority :- ① Inform the Dr.
② Maintain position ⇒ 'dorsal recumbent'
↓
Relaxes muscles.

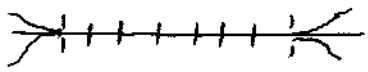
* Expected Mx by nurse :- (NPO.)

(i) Wound Evisceration :- Suture remove from mid point.
↓
organ remove from cavity



*Nsg priority :- * Cover the wound ⊂ 4x4 sterile wet gauze (in NS)
↳ Change when dry.

(ii) Wound dehisence :- suture remove from edge of wound



Nsg priority :- pressure apply on remove suture.
⇓
inform the Dr.

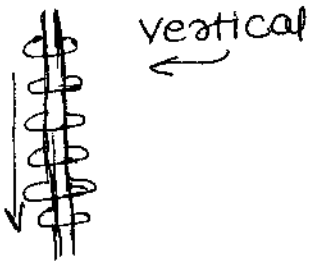
4. Haemorrhage :- Intermittent bleeding
⇓
indication of infection ⇒ Time :- 24-48 hr

Secretions.
↳ watery secretions → converts → Thick
*Indication of infection.

Clean.
dirn. * Inner to outer | central to peripheral {open wound}
Rat :- prevent infection spread to blood

* Colostomy Wound :- outer to inner.

Surgical Wounds
after suturing
*up to down ⊂ pressure



Wound Irrigation :- clean the wound

Solution :- 1. MIC soln :- N.S.
2. Betadine :- MIC antiseptic soln.
3. H_2O_2 :- when pus ⊕nt.

* Eusol :- in case of Gram ⊖ve inf.
↳ Eg :- Pseudomonas.

*Procedure:- Irrigation dirⁿ ⇒ Central to Peripheral
↓
By syringe :- 20 / 50 ml. (pressure)

Secretions :-

1. Serous :- clear, watery plasma. (normal)
↓
convert in thick., colour changes ⇒ infection

2. Prulent discharge → Thick, yellow, green, tan, brown colour ⇒ infection.

3. Serosanguineous :- Pale colour, pink, mix ē blood, red fluid.

* Blood component & pus mix
↳ Infected wound

4. Sanguineous :- bright red colour discharge
↳ active bleeding (all blood component Pnt)

Bed Sore
aka 'Pressure sore', 'Decubetic Ulcer'
↳ Breakdown of integrity of skin due to regular press.

Cause ① Pressure ③ friction
② Moisture ④ Shear

Main cause of 'Pressure sore' ⇒ Pressure

- Pressure ⇒ Regular pressure in particular area
↓
Blood circulation ↓ed
↓
O_2 supply ↓ed
↓
Ischemia → Necrosis → Ulcer

⇒ Early Symptom of Ischemia ⇒ Pain
due to anaerobic resp ⇒ LA.

⇒ Highly risk group for press sore :- Very thin

→ Moisture :- Help in press. sore
- Regular moisture at area ⇒ skin easily break.

→ Friction :- due to wrinkles on mattresses.
↓ Main site :- Heel area
Help in pressure sore.

→ Shear. - Help in pressure sore
↳ Both side pressure. (by bone and bed)

⇒ Highly risk area | points for Bed sore :-
(Bed ridden Pt.) Eg :- Paralysis, Unconscious, Burn, Very thin
COPD. (nasal cannula), obese.

⇒ Common pressure points. :-
(alc. to position)
① Supine :- occipital area, shoulder, Elbow, Sacrum, heel } due to friction
M/c in supine
② Prone :- Ear, cheek, breast. (female)
genital area (male), knee (M/c)

* Stages of ~~Wound~~ Bed Sore (IV stages)

First stage :- Involvement of Epidermis
↳ Epidermis - intact
↳ Change in colour → Red colour / purple
↳ Wound ⊖nt
↳ pain ⊕nt., burning sensation.
↳ loss in brightness of skin.

Second Stage :- involvement of dermis. (Epidermis-break)
→ Superficial wound
→ pain ⊕nt, peak level*, severe
→** Blister formation. → Pink colour
→ filled c fluid.
→ no secretions.
→ Edema around edge of wound.

Third Stage :- deep wound
- Secretions ⊕nt
**- pain ⊖nt, sensations ⊖nt
- Colour :- pink c White (+ fat)
- Edge can be black in colour (severe)

Fourth Stage :- deep wound.
- pain ⊖, sensations ⊖
- muscles, tendon, bones :- involved
⇒ Bone colour :- black*
- foul smell from bone

Precautions
- Change the Position - every 2 Hours.
- Give massage at bony point gently.
Apply ointment before massage.
- Assessment of Bed Sore :-
Scale :- Bradon scale (MIC) ⇒ max no. 23, mini 6.
Norton scale.

- parameters of Bradon scale :-
① Moisture ⇒ 4
② Nutrition ⇒ 4
③ Activity ⇒ 4
④ Friction ⇒ 3
⑤ Sensation ⇒ 4
⑥ Shear ⇒ 4
= /23

Care of Bed Sore → identify - press. sore ⇒ colour change at bony point.

- Nsg role :- inform Dr.

- Change the position ⇒ every hour / 60 min.

- Irrigation / Clean :-

  Chem. :- Betadine

  - H_2O_2 (if pus ⊕nt), Eusol (in Gm ⊖ve)

- Therapy for Wound Healing :-

① Hot application. ⇒ use dry heat.

↳ use 100 W bulb.

↳ Cycle :- ③

- duration :- 10 min / cycle.
- Gap b/w cycle :- 6 hours.
- distance b/w wound & bulb = 45 - 60 cm.

② Antibiotic Therapy :- Ab. direct apply on wound.

③ Latest ⇒ Insulin therapy :- drop-to-drop ⇒ 2 drops

↓

direct Ab. apply

⇒ O_2 therapy :- direct O_2 supply over wound.

↳ Rat :- ↑se cellular metabolism ⇒ ↑ cell division ⇒ Wound Healing fast

* Sample collect from wound (for culture), moist the wound ↙ then collect sample

↳ avoid cleaning wound.

Nursing Process.

Provide care step-to-step for better improvement in health

Tools ① Assessment
② Diagnosis.
③ Plan.
④ Implimentation.
⑤ Evaluation.

Assessment. First step of nursing process.
* Imp. step. " " "

• Indications :- during admission.
" discharge

* Q. discharge planning ⇒ at admission time *
- during follow up.
- before & after procedure.

• Complete History and data collection.

Types ④ Types.

1. Initial Assessment :- at admission time
- complete data and History collection.
- disease, medicine, allergy, Surgical Hist.

2. Ongoing assessment :- after 48 hours.
aka 'Timelapse assess'
- check the Dve & Ove effect.
- check the S/E of Treatment.

3. Focus assessment :- special condition / critical disease.

* only assess single Pt. / isolated.

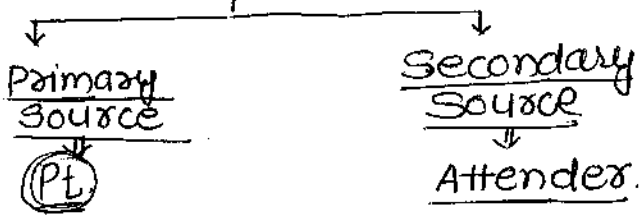
-E.g:- Care provide in S.C.U.

4. Psychological assessment :- in mentally ill Pt.

Tools of Assessment :-

- Interview
- data collection & History
- Record & Reports.

1. Interview :-



** Q. Pt. unconscious than, primary source of interview?
Ans. Pt.

Types :- ① structured interview :- Pre-decided answers
Pre-planned.

② unstructured interview :- Ans. can change a/c to situation or condition.

② Data Collection :- 2 types :- ① Subjective ② objective

- Information provide by Pt. ⇒ Subjective data
- Info. provide by other than Pt. ⇒ objective
  ↓
  E.g. Healthcare worker

Physical Examination :-

→ Position used for physical exam^{n} :-

① Supine :- Mostly used for vital signs.

② Abdomen cavity Examination ⇒ Dorsal recumbent *

⇓

Rat. :- relaxes abd. cavity muscles.

③ Lithotomy :- Vaginal exam^{n}.

④ Prone :- musculo-skeletal exam^{n} Eg :- Hip fracture

⑤* Squatting ⇒ Check inguinal hernia

- Instruct Pt. for coughing
- Pt. complaints of severe / cholic like pain*

⑥ Knee chest* (1st priority) :- Rectal examination.

↳ also use Sims :- lateral (2nd pri)

⑦ Pelvic cavity Exam^{n} :- Trendelberg *

⑧ Sitting :- face, neck, chest examination

- Check the expansion of buttocks.

Tools of P/E :- ① Inspection
② Palpation
③ Percussion
④ Auscultation

• for Abd. cav. :- I Am Per Pal.

1. Inspection :- help of eyes.

↳ colour of body, posture, gait.

Eg :- * Cherry red colour - oral cavity (Buccal cav., tongue)

⇓

* early indicator of Carbon monoxide toxicity

* yellow colour sclera, nails :- Jaundice

* Pigeon chest (more in childs) :- Rickets (vit.D def.)

Vit. D def in adults :- Osteomalesia.

⇒ Barrel chest :- Emphysema

⇒ Vitiligo :- white patches on skin (due to Malenin)

⇒ Beau's line (nails) ⇒ white lines at lateral side of nail.

U Cause :- def of Ca^{+2}.

2. Palpation :-

* Palpation :- indications :- Check the size and shape of organ.
↓
direct touch the Pt.
- Check the circulation.
- " " temp, pulse
- Check the tissue turgor. (to confirm dehydration)

- Confirmative exam^{n} for dehyd :- Tissue turgor *
site :- Chest (adult / old)
Child ⇒ abdomen (ii) thigh

* dehyd^{n} < 6 months ⇒ Sunken fontanalles

- Check the overgrowth of mass. / size-shape of Tumor.

Q. Tumor exam^{n} in Thoracic / Pleural cavity? By Percussion.

- Breast self exam^{n} ⇒ Position ⇒ Standing. time :- every month
↓ * 7-10 day after M.C. starts
Secondary prevention. (before bathing)

⇒ Sound :- size and shape of organ :- Ont sound
Check the circulation ⇒ Thrill sound (High pitch)
Eg :- A-V fistulla ⟶ Steal arterial synd^{r} (normal finding)

Types :- ② ① Superficial (light) - ② Deep
indication :- Pulse rate, circulation - Check the size & shape of organ, size of tumor
compression :- 2-3 cm. - 4-5 cm.

Q during palpation, Pt. complaints of Pain, Imp role of nurse?
a) ↓se pressure at palpation point.
b) inform the Dr.
c) documentation
d) Stop the palpation

* Percussion produce artificial sound by tissues.
Eg:- body cavity or orifice of body
- Hollow muscular organs

⇒ Body cavity :-
⇒ if Empty ⇓
Tympanic sound
aka 'Drum like sound'

⇒ if fluid or air ⊕ in body cavity ⇓
- dull sound.

→ Tumor examⁿ in Thorasic cavity :- Percussion.
↳ dull sound.

→ muscles and bones. ⇒ Percussion ⇒ flat sound (High pitched)

* Auscultation :- help of stethoscope.
↳ To auscult natural or artificial sound.

E.g:- Resonance sound ⇒ normal lungs sound.
↳ Low pitched.
- High resonance sound :- empyema, pneumonia, mucus.
↳ High pitched sound
- Bowel sounds / peristaltic movements :- High pitched
- fecal move in intestine :- Gargling sound.
- Bruit sound :- A/V fistula :- during dialysis.
↳ flow of blood ↑

Diagnosis ↳ identify actual problem.
⇓
* Set the Goal (Planning) ⇒ written the action plan.
⇓
Implimentation :- written plan apply on Pt.
- Rx start.
⇓
Evaluation :- check the effect of implimentation i.e; Rx.

Hospital

- derived from 'Hospice'
  ↓
  Hostel, Hospital, Hotel

- Treatment given to ⇒ Terminal ill Pt.

Q Which of the following care provide to a terminal ill Pt?
a) Strict schedule for medicines
✓b) Provide Palliative care
c) Protect infection.
d) Provide comfort.

© Palliative care:- reduce the severity of disease.
e.g:- Pain ← main focus.

Q Terminal ill Pt. misbehave ć n.o., role of nurse?
Ans normally accept.

Types of Hosp.
Based on capacity:- ① Large Hospitals. (Grade-A-Hosp)
>300 beds.

② Medium :- aka 'Grade-B Hosp' :- Bed:- 100-300 bed.
③ Small :- 'Grade-C Hosp' <100 beds.

⇒ Teaching Hosp. ⇒ Medical college :- Provide education & training.
↓
min:- 500 beds

⇒ Specific Hosp. :- Eg:- Cardiac Hosp., Cancer Hosp.
Neuro. HOSP

⇒ Isolation Hosp.:- deal ć communicable disease

Pt. unit (Ward) ⇒ Temp:- 22-24°C
I.C.U :- 20°C
O.T. :- 18°C
Cath lab. :- 16°C
- labor room :- 26-28°C (prevent hypothermia)

- Humidity :- 40-60%
- Velocity of air :- 1-3 mile

- Articles in Pt.'s unit :-

① Side locker :- Place right side of Pt.
Use :- Put all medicines

2. Bed ⇒ distance b/w 2 beds ⇒ 6 ft.
Rat :- Prevent communicable disease.
length :- 78 inch. width - 38 inch height ⇒ 28 inch

© Size of mattress :- length :- 78 inch.
width :- ~~38~~ 36 inch.
thickness :- 6 inch.

↳ Quality :- Hard.

* Departments in Hospital :-

→ CSSD ⇒ Central Sterile supply dept.
- Sterile articles supply to pt.'s unit.

→ HR Dept. ⇒ make the policy for recruitment.

→ Medical Record dept. :- use in research.*
- Check the progress in Pt. health.

* Types of Records :- → Eg :- Poisoning Pt, accident, burn Pt

→ Legal Record :- use for evidence in court.
- Lifetime or min. duration → 15 years

→ IPD Record :- ⓓ admitted Pt's record
- Storage :- 10 years.

→ OPD. :- " → 5 years.

*Pt. admission in Hospitals 2 types
① Routine admn.
② Emergency admn.

Routine admn.

- pre-planned, alc. to Δsis.

Emergency admn

- Pt. admit in critical condition.

E.g:- poisoning, accident, burn, gunshot.

Imp. role of nurse during admn:—

- Assessment

Q. discharge planning is done at ? ⇒ Admission time.

- Discharge the Pt. → Imp. role of nurse:—

⇒ Pt. demand for discharge ⇒ inform the Dr.

⇒ Before discharge, check the Dr's prescription.

⇒ Give instructions to Pt.:- about medicine - eff / S.E.

- med. dose ↑se or not ↑se.

- instruct for side effects

Eg:- Rifampacin :- red colour urine

desferoxamine — " "

*Types of Discharge:—

1. Relieving Discharge:- when a pt. discharge after achieve goal of admission.

↳ MIC type of discharge in Hospital.

↳ Normal discharge.

2. LAMA (Leave against medical advice):- Pt. and his attender not satisfy ∈ Rx of hospital. Most critical MI Pt. / 48 hrs.

→ Imp. role of nurse :- Written consent.

3. Discharge on Request :- Pt. requests for discharge bcz family / other problems.

4. Absconding :- Pt. leave Hospital ~out any information
↳ ~out paying Hosp. bills.

* Pt. Death in Hospital :- Stages of Death :- (4)

1. Pallor mortis :- first stage of death.
- discolouration of body / change body colour.
- first observed ⇒ Face
- duration :- start after death (15-30 min. / ~in 2 hours)

2. Algor Mortis :- 2nd stage of death.
- gradually ↓se the body temp.
- time (18-24 hours)

3. Rigor Mortis :- 3rd stage :- stiffening of Body.
- duration ⇒ 4-6 hours.
- First part :- Jaw.*

4. Livor Mortis :- Blood settle in lower extremities.
↳ Body complete - blue coloured.

* Care of Dead Body :- after death → inform the Dr.
- Confirmation of death :- E.C.G.*
- all orrifices closed ~ dry gauze piece.
- Remove every articles. E.g :- Catheter, cannula, tubes
- Cover the dead body ~ grey sheet.
- Preserve dead body ⇒ Formaline

* Comfort devices in Hospital :-
main purpose :- relieve the pain.

1. Sand bag :- bag filled ē sand.
↳ use :- immobalization of extremity.
- provide support to amputation part / fracture
⇒ Prevent wrist drop and foot drop.
⇓
unconscious pt.
⇒ complications of wrist drop → Radial nerve injury.
⇒ " " Foot drop ⇒ deep peroneal nerve injury / Shiatic nerve injury.

Q. Prevent foot drop in unconscious pt.
(i) Sand bag (I priority) (ii) Foot rest / Foot board

2. Bed Cradle :- made up of → metal
- Shape :- semi-circular.
• use :- in Burn Pt. [Prevent direct contact ē blanket]
- Rheumatoid Arthritis.
- Hypothermia
- Hypovolemic shock.
- use for dry the cast.

3. Air Ring :- Plastic / Rubber tube filled ē air.
↳ Prevent pressure sore.
Eg :- elbow, occipital area, heel area.

4. Water mattress / air mattress ⇒ use in bed ridden Pt.
Eg :- Paralysis, unconscious, trauma.
⇒ also use in burn Pt.
⇒ To prevent pressure sore

5. Knee Rest :- provide support to knee

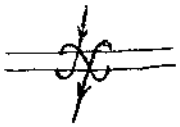
* Amputed part - elevated, Apply the sandbag.
(To prevent bleeding).

* Traction

↳ Skin Traction :-

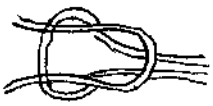
Use :- immobilization of extremities.

Knots :- ① Clove Hitch.



② Barrel hitch.

③ Reef knot.



④ Half hitch.

⑤ two half

⇒ Buck's traction / Extension traction :- Temporary mgmt. of Hip fracture (/femur)

- Femoral shaft / neck
- undisplaced fracture of acetabulum.

* ⇒ Wt. not more than 5 kg.

⇒ Change the linen ⇒ first from foot side -> than on head side

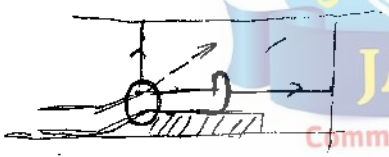
⇒ if foot end touch the edge of bed :- inform the Dr.

⇒ Resolve the Hematoma

⇒ Russel Traction ⇒ use :- allignment of femur.

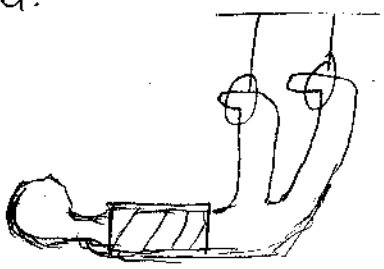
- imp. role of nurse :- Check the lower extremity circulation (popliteal artery)

↳ extra press. on knee



Bryant's (Gallow's) Traction # Pelvic sling traction.
Pelvic belt. # Lumbar Tract. # Head Halter

⇒ Bryant's Traction mainly use in child.



→ fracture :- shaft of femur.
→ also use :- Hip displacement.
⇒ apply in both legs
⇒ chest and abdomen binder
⇒ knee slightly flex.

⇒ Pelvic sling T. Back pain.
- fracture in Lumbar vert.
- apply in lower pelvic area

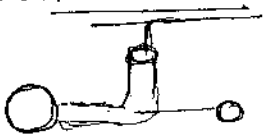
⇒ Pelvic Belt ⇒ Back pain

⇒ Lumbar T. ⇒ apply at both lower and upper side
- mainly at :- spinal injury
- vertebral injury

⇒ Head Halter ⇒ cervical pain.
Chin Halter.
Complication :- difficulty in breathing.
↳ instruction → inform the Dr.

Skeletal Traction :-

1. Overhead arm :- in displacement of shoulder



Care :- Clean the traction site
c̄ pressure, c̄ help of
10% betadine gauze (daily)

2. Balanced suspension ē Pearson attachment :-
↳ in Multiple fractures.

3. HALO Traction :- in Head injury., Skull bone fracture, trauma, rib fracture

4. Crutchfield Tongs :- fit into Parital bone ē help of drill.
↳ complication :- ↑ ICP. - ALOC.
↳ use in Spinal Injury

C.P.R.** Cardio-pulmonary Resuscitation

aka BLS. (Basic Life Support) :- Primary source ©

ACLS :- Advanced Cardio-Vascular Life Support. ⇒ Secondary source
↳ performed only by Medical Team.

• CPR can be given even ēout HCW (any person)

⇒ Way :- ABC. CAB.

⇒ during (CPR) ABC is changed into CAB. → chest compression

⇒ CAB. :- Basic indication :- Cardiac arrest
- Resp. arrest

⇒ Cardiac dysarrythmia / Pre mature ventricular contraction ⇒ ABC.

Q. during CPR :- use (a) ABC (b) CAB

Q Pt. came in emerg. after trauma / RTA / Burn / Anaphylactic shock, give instruction for CPR, than use ⇒ ABC.

*Purpose :- Restart the fn. of Heart or Lungs.
↓
To prevent Brain death

* Cardiac arrest Pt. :- if CPR not given ⇒ Brain death ēin (5)-10mi

⇒ Before CPR, Nsg Priority :-
- Check the response / assessment.

Q A. N.O. enter in Pt. unit and observe a Pt. fell on floor, What is the Ist Nsg. priority?

1) Check the injury
2) Check the circulation
3) Check the response ⇒ COWS formula :⇒
   C :- Can you Hear me?
   O :- Open your eyes?
   W :- What is your name?
   S :- Squeeze my hand.
4) Start C.P.R.

⇒ Shaeke and slap :- Gently

⇒ In child, Infant, neonate :- Check reflex. ⇒ Rub the palm & sole.

⇒ Unresponsive :-
⇓
nsg priority :- Check the circulation. ⇒ carotid artery 2 fingers, ⏲ 10 sec

⇓

Q Circ.-abst. / Pulseless ⇒ Nsg. priority :- * Alert Emerg. Code (Blue Code)

Q. A N.O. identifies Pulseless Pt. / Carotid Circ. ∈nt, I Nsg priority

(a) Maintain the airway
(b) Start chest compressions
(c) Alert - Emerg. Code (Blue Code)
(d) Suction.

* After alert Blue Code :
⇓
Start CPR

Procedure → Use flat and Hard surface.

→ Position:- Rose position (I) / Sniffing (II) ↓ maintain the airway

→ Site :-
Lower half of sternum,
(mid-sternum).

- Chest compression :- 2 inch. (→ 5 cm) max ⇒ 2.4 inch. (1.5 for infants.)
- Ratio of chest compression & Artificial breath ⇒ 30 : 2 (Rescuer ⇒ 1/2)

⇒* Chest compression in 1 min ⇒ 100 (ideal) - 120 ⇒ max

⇒② Artificial breathe give in 6-8 sec. (max - 10 sec)

Q During CPR, A N.O. completes 30 compressions & give 2 art. breath, then restart compression ⇒ 6-8 sec. (max - 10 sec)

⇒ During CPR, change the rescuer / HCW ⇒ ⑤ cycles completes 5 x (30 : 2) / ② minutes

⇒ 5 cycles of CPR complete in 2 min.

Q. Change the position of rescuer / HCW ⇒ after 5 cycles / 2 min During CPR

⇒ Check the effect of artificial breath during CPR :- observe chest expansions. (↳ also pinch the nostrils)

Q during CPR, A N.O. give artificial breath to Pt. and observe abdomen cavity expansion, what expectation by N.O?

① Normal finding
② Air goes in lungs
③ " " " Stomach
④ Effect of chest compression.

Q Check the accurate rate of resp ⇒ in unconscious Pt? (↳ Resp :- slow)

(a) Listen breath sound (b) Check chest expansion & count
(c) finger at nostril & count (d) put the palm on chest & count.

CPR in Child :— (1-8 yr)

- Check the circulation (Femoral art. / also brachial art.)

⇓

if found pulseless / circ. ent ⇒ Imp. role :- alert emergency code (Blue)

⇓

Start CPR.

⇒ Ratio :- 30 : 2

⇒ in case of 2 HCW / rescuer :- 15 : 2

⇒ Site. :- Lower half / mid sternum.

⇒ Compression :- 1 - 1.5 inch.

⇒ Compression in one minute :- 100 (ideal) - 120 (max)

⇒ 1 artificial breath ⇒ 1 sec ⇒ Total ⇒ 6-8 sec.

⇒ restart chest compressions ⇒ in 6-8 sec

In Neonate.

Check response :- via reflexes

⇓

Check circ. ⇒ Brachial artery

⇓

Alert Emergency code ⇒ Start CPR.

Ratio of chest compressions & artificial breaths. :- 30:2

⇓

given by 2 fingers. (Single rescuer)

⇒ Site :- Just Below nipple

2 rescuer ⇒ ratio :- 15 : 2 & thumb

*2.5 - 4 cm :- chest comp.

⇒ Maintain the airway :-

Method :- ① Head Tilt Chin-lift method

⇓

Open the mouth & check tongue (If prolapse)

* M/C cause of airway obstruction in unconscious Pt

⇓

Tongue prolapse

* M/C method used to open airway.

⇒ Mainly use in unconscious pt.

② Jaw-thrush method :- use :- Trauma, accidental Pt.
- Cervical / Spinal cord injur
- fracture

Forward press. at angle of Jaw.

③ Abdomen thrush method ⇒ Remove foreign particles from resp. tract.
'Hemlich Maneuver'

SIS. :- 3C. :- coughing, Choking, Cyanosis.
- Pt. unable to speak.

Procedure ↳ Position :- Standing & lean forward.

N.O. Stand behind the Pt. and give 5 abdomen thrush.

Q. During abdomen thrush, foreign particles remove. ⇒ Stop abd. thrush.

* Complete 5. abd. thrush, then check the oral cavity. if foreign particle Ø nt, remove it c magill's forceps.

* Abd. thrush in obese person, give supine position. compression at (1) Epigastric area.
(2) Lower half of sternum.

during pregnancy. ⇒ supine position. and compress @@ Lower half of sternum.

I.V. Therapy

Large quantity of fluid given via peripheral or central vein.

- purpose :- ① Use fluid volume.
  ② Replace the fluid & electrolyte

- Indications :- - Hypovolemia
  - Burn Pt. *
  - dehydration. e.g. (vomiting, severe diarrhoea), Hemorrhage.

Types :- 3. types.

1. Isotonic :- (N.S) ← M/c fluid use in clinical practice
   ← M/c use in Irrigation
   ↳ urine output either normal / ↑
   - dialyser in peritoneal dial. ⇓ isotonic
2. Hypertonic :- ↑ed Conc.
   - after infusion, ↑se blood conc. ⇓
   # Exchange body fluid :-
   Intracellular → Interstitial → Intra-vascular (Blood) ↑
   ← Kidney ← ↑se urine output
   normal urine output : 30ml/hr.
3. Hypotonic :- ↓ed Conc.
   - after infusion, ↓se blood conc. ⇓
   # Exchange body fluid :-
   Intravascular (Blood) → Interstitial → Intracellular
   ← Kidney ← ↓se urine output

- Indications :-
  ⇒ Edema → relieves edema.
  ⇒ Liver failure, cirrhosis, carcinoma ⇒ fluid used ⇓ (Albumin)
  - Blood component ⇒ F.F.P

@ Check the effect of Hypertonic fluid :- ↑ed urine output.

- Complication → Cell shrinkage, ↓ size
  dehydration. ⇓ dry skin.

3. Hypotonic :- low conc. ⇒ ↓se blood conc., after infusion
→ exchange fluid ⇒ Intravasc. → IS → Intracellular.
⇒ ↓ed urine output.

• indications :- dehydration eg:- severe vomiting, sev. diarrhea

• Complication :- cellular edema → rupture

Isotonic fluid

Eg:- RL, NS, 5% dextrose in water.

R.L. aka 'Hartman Sol^{n}'
'Emergency fluid'

- use alc to priority :- (i) Burn Pt.
*(ii) Overdose of Opoids.
(iii) Chemical injury in eye (irrigation)

N.S. - M/C Isotonic fluid used in clinical practice.
☺ Safest fluid in D.M. Pt.
- Given c̄ blood transfusion.
- Given before & after B.T.,
- Maintain the patency of cannula
- Mostly use for irrigation. E.g. body cavity, bladder, wound.

5% Dextrose in H_2O :- Quickly provide energy.
after infusion → convert in hypotonic
↓
dextrose change in glucose

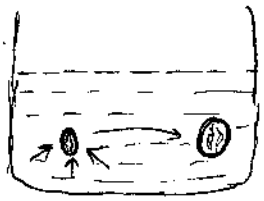
Hypotonic fluid

Eg:- 0.45% NS.
- 0.33% NS. (1/3rd)
- 0.225% NS. (1/4th NS)

Hypertonic fluid

Eg. Albumin, TPN*
- Colloids
- Mannitol

Osmosis- movement of solvent from low conc. → High conc.
Diffusion:- " " solute from high conc → Low conc.



Procedures

⇒ Site for IV therapy :- a/c to duration
- Short time :- 5-7 days
  @ Forearm
  Eg:- during surgery, dehydration, relieve edema.
- Long time :- upto 28 days or as policy of Hospital
  E.g:- central line, central catheterization

* mainly use for :- Hypertonic fluid admn.
  - massive blood Transfusion
  - dialysis
  - TPN
  - frequent collect blood sample
  - Give large quantity fluid

- Size :- 7 French (Mic used in clinical practice)

** <2yr child :- 3 Fr. size

- Insert length :- 13-15 cm

- Site @ Juglar Vein - (Right side)

Rat. :- Direct path of Rt. atrium.

② Subclavian vein (Lt. side)

* CVP :- 3-8 mmHg*
5-10 cm H_2O

* Check CVP :- during exhale tim
⇓
End of Exhalation.

- Give instruction to Pt :- Forcefully exhale.

⇒ Care of Pt. / Central line ⇒

- Flush the Central line ⇒ Chem. used ⇒ Heparin C N.S.

Q. Chem. use for flush the central line / catheter?

a. Heparin.
b. N.S.
c. Soda Bicarbonate
d. H_2O_2

Ratio of Heparin & N.S.
1 : 1
500 unit — 500 ml

⇒ Infusion any fluid through central line, then flush.
Eg:- TPN, dialysis, albumin
⇒ 10 ml Heparin C N.S.

⇒ Blood component infuse through central line ⇒
20 ml Heparin used.

* Collect blood sample, Nsg priority :- ⇒ Remove 5 ml blood then collect sample

* Sample collect for culture ⇒ direct collect blood sample.
* no need to remove 5 ml blood first.

Outer side Care :- Twice in a day - Chem :- Betadine

Types :- 2 types :-

1. Non-tunnel :- catheter direct insert in vein
   - short time use
   ↳ ↑se chance of infection

2. Tunnel catheter :- First insert under skin then in vein.
   - use long time
   - less chance of infection → easily treatable
   - use for chemotherapy.
   - Paralysis ; GI.

Remove Central line ⇓ gmp. role of nurse :-
⇒ Check ① Apply pressure at site
② check the tip of catheter.
↙ dislodge / cnt ⇓ inform the Dr.
↘ cnt :- cut & Send to lab. for Culture ⇓ to detect any inf.

Complications :-
1. Infilteration :- M/c complication
   - dislogged cannula

S/S :- pain - coolness
- Swelling / Edema

Nsg My :- ① Stop IV therapy ④ Give cold application
② Remove cannula ⑤ Avoid massage
③ Apply pressure at site ⑥ Elevate the extremity

2. Thrombophlebitis :- Inflammation of Vein

Infection occurs first, then thrombus is formed.

Cause :- fluid leakage at puncture site

SIS - Pain
- Redness, Swelling
- Warmthness
- Tenderness
- Hardness (Cord like Vein)

Nsg :- Same as infilteration.

3. Air Embolism :- Air enter in circulation.

- Cause :- during drug infusion (Powder form dilute c distil water)
↓
M/c cause
- fluid leak

- SIS :- Tachycardia, dyspnea, diaphoresis, anxiety, chest pain

- Nsg :- Same as thrombophlebitis
position :- Lt lateral

P. Priority :- Lt. lateral position and foot of bed-elevated.

4. Hematoma :- accidently injury / trauma at cannulization site

SIS :- Echymosis (around the site) of cannula.
- Pain.
- tenderness. (Edema)

Nsg :- Same as infilteration.
- Give cold application.
- Jelly from Heparin apply

Crutch Walking

- measurement :- Foot to axilla.

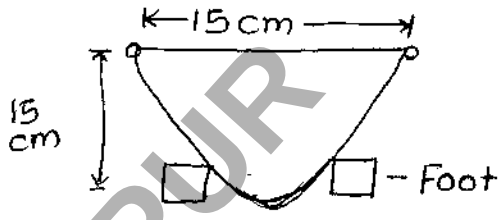
Gap. b/w axilla and crutch :- 3 finger / 2 inch.

↳ To prevent Brachial Plexus injury.

⇒ Elbow Flexion :- 20-25°

- Check by the Goniometer

position :- during crutch walk ⇒ Tripod position'



Q Which of the Following position assumed by Pt. before crutch walk.

Ⓐ Standing
Ⓑ Standing c̄ Lean forward.
Ⓒ Tripod position → Polio Pt.
Ⓓ None

Neonate sitting – sit first time

Instruction →

Tertiary prevention → Rehabilitation

- during crutch walk → Look in front.
- Nsg officer walk c̄ affected side

Types :- Ⓐ Four Point Gait :- Wt. bearing in both leg
- Parallel Wt. bearing

Eg :- ↓es muscle elasticity

Walk :- first move (Right crutch then left leg)
then Lt. crutch then Rt. leg.

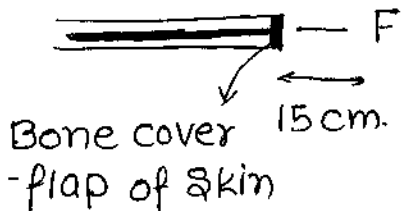
Ⓑ Two Point Gait :- Partial Wt. bearing
- Similar to Four gait
- But Faster than Four gait.

Move :- Rt. crutch & left leg then
Lt. crutch & Rt. leg

* Pt move a crutch at the same time as the opposite side move

© Three point gait :- Wt. bear on one foot & in both crutc
affected leg don't touch the Floor / ground.

Eg. Amputation



* Pillow apply under the amputation part.

Walk :- complete Wt. borne on unaffected leg
⇓
Both crutch in front

Swing Gait :- Pt. walk by jump and move at the level of crutch.

Swing through Gait :- Pt. walk by jumping but jump forward to crutch.

Bandage

Outer protective covering of wound

Types 1. Gauge bandage** :- MIC used in clinical practice

Size :- 1 inch :- Toe and finger
2-2.5 inch :- Head
3-3.5 inch :- Forearm & lower limb.
4-6 inch :- Trunk, thigh (thorax)

2. Creb bandage :- aka Elastic bandage.

Indication :- muscle spasm, trauma, echymosis.

use :- hot application provide
- provide warmness or heat
↓
help by reducing edema and relax muscles

- duration :- min. ⇒ 6 hrs.
for better effect ⇒ 12 hrs.

3. Compression bandage :- Prevent the leakage
- Prevent the risk of bleeding.
Eg :- IV pylogram, angiography, myleography

4. Oxy Bandage ⇒ Superficial frictional injury

5. Wet Bandage ⇒ cover the wound → infectious wound
- dressing wet ć antiseptic soln

6. Triangular Bandage Supportive bandage after Fracture.

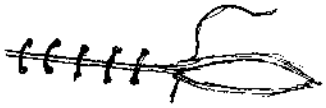
Pattern of Bandage Applying:

1. Cap Line ⇒ apply over the head.
2. figure of 8 ⇒ Wrist, knee, elbow, clavicle - after amputation
3. T-shape bandage :- perineal area. vaginal surg, Hemerhoidectomy.
4. Spiral bandage ⇒ M/c use in clinical practice forearm, thigh, leg, chest

Sutures:- a series of stiches used to close the open wound.

Types.

① Interrupted / Intermittent :- every knot is applied seperately to close the wound



② Continous suture :- one knot at the begining and one knot at last of wound.

③ Mattress suturing ⇒ deep wound ⇒ double suture.
⇒ Femur surg. (thigh)

Needle twice cross from a ~~two~~ hole a wound.

* Colour coding of Sutures.

- Plain catgut ⇒ yellow
- Chromic catgut ⇒ brown
- Silk :- light blue
- Nylon :- green.
- Vicrile :- purple
- Stainless steel :- Silver

] ⇒ absorbable

Types (a/c to matter) :- ②

1. absorbable.
   ⇓
   - dissolved by body tissue
   ⇓
   Types of absorbable :-

① Natural absorbable (catgut)

Ⓐ Plain Catgut
Sonlips.
⇒ recieved from small intestine of sheep.*
⇓
Submucosal membrane
⇒ also recieved from Goat, Horse.

Ⓑ chromic catgut

② Synthetic absorbable
⇓
absorbed ē help of chem.
Eg. polyglycolic acid
- 910 - vicryl

⇒ absp. time :-
- plain catgut :- 5-10 days
- Synthetic :- 14-21 days
* chromic :- 90 days

2. non-absorbable
   ⇓
   - not dissolved
   - need to remove

⇒ Non-absorbable Sutures :-

Types :- ① Natural
⇓
Silk.

② Synthetic
⇓
Stainless steel, eg prolene, nylon, polyamine

Duration of Removal :-

① Face, neck, head :- 5 day - 7 day (→ max)

② Trunk, chest, back, :- 7-10 day
(above pelvic cavity)

*Avg. time :- 7-10 day

③ Lower limb ⇒ 10-14 days.

⇒ Stitches used on face (lips, cheek, forhead) :- plain catgut
↳ absp. in 5 days.

Chest tube Drainage

A tube / catheter insert in the pleural cavity through chest wall

Purpose :- ① ↓se the lungs - tissue pressure.
② Relieve dyspnea.
③ ↓se thoracic cavity pressure

Indications :- Pleural effusion.
eg :- Hydrothorax, Hemothorax, pneumothorax
Empyema, chylothorax
(Lymphatic fluid)

Articles
1. Drainage tube / catheter
2. Needle
3. 2% xylocaine inj.
4. 10% povido-iodine
↓
clean / paint the site
5. Drainage bottles :- (3)
6. Vaseline Gauge piece

XYZ
DOTS Prover.

Procedure
Position :- Fowler's ⇒ fluid settle; relieve dyspnea in lower side

Site Selection :- 7th, 8th, 9th ICS (MID) ⇒ mid-Axillary line @ affected side.

pneumothorax :- 2nd, 3rd ICS, Antr side

Aim: X-Ray

Pre P.

Auscultation

↓

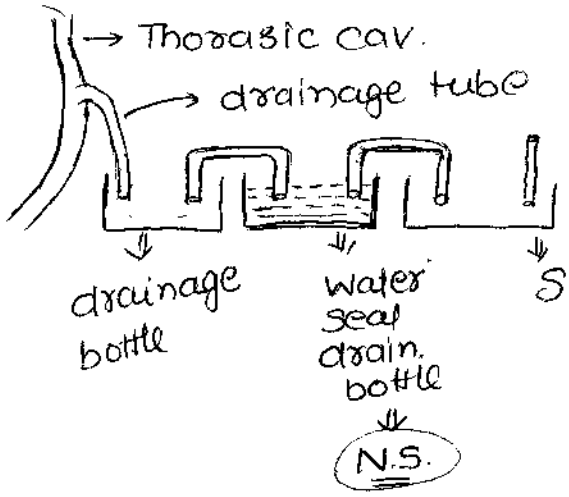
vry dull sound - diminished sound.

Clean the site. ∵
10% povido-iodine.

Instruct the Pt. :- inhale and hold → more pressure in cavity, less chances of injury

↓

catheter / tube insert in thorasic cavity



- Suction press:- 5-10 cm of H_2O
- duration:- 3-5 days or a/c to amount of fluid (75-100 ml/hr)

2 inch ← Tube inserted

Fluid > 100 ml/hr

↓

inform the Dr.

< 75 ml/hr

↓

Stop procedure/ remove tube

Care of Pt.

⇒ Oscillation of fluid in water seal drainage bottle. ↓ normal finding

⇒ during inhalation:- fluid moves upward

" exhalation ⇒ fluid moves downward

if flow ⇒ stops

↓

tube - blockage

↓

inform the Dr.

⇒ Observe bubbles in water seal drain. bottle

↳ normal finding

↳ normal (bubbles :- intermittent) ⇒ normal finding

↳ bubbles :- regular/rapid ⇒ abnormal, inform Dr

due to air leakage ⇒ Nsg priority

↓

- Complication ⇒ pneumothorax

Bubbles ↓ Stop

↓

obstruction

⇒ Chest tube drainage :- stopped :- ③ times

- during tube insert in cavity
- during pt. transfer
- during remove

Hemlich valve

⇒ Imp. role of Nurse during Care ⇒

- Accidently water seal bottle break / drainage / suction bottle break.

↓

Nsg priority ⇒ put the tube in NS.

- If tube dislogged accidently from chest.

↓

Nsg priority :- perform Vulselum maneuver (pressure apply at wound)

(to prevent pneumothorax)

≤ 4x4 vaseline gauze piece ≥

- give instruction to Pt ⇒ deep breathing exercise.
- Fluid amount < 75 ml / hr. / duration 3-5 days

↓

Remove tube / stop procedure

Surgical Blade

- Surgical Blade pass / transfer ⇒ through kidney tray
- Incision making method :- Far to near.
  - Perpendicular

11 no. Sx blade → aka → Stab blade

Tip :- both side pointed

Use :- in unwanted drainage

e.g :- infected wound ↓

- Remove pus under skin ⇒ puncture
- Blood collect under skin ⇒ Hematoma, echymosis
  - unexpected trauma → infected
- Remove mucus from wound

12 no. Sx blade

To remove sutures ⇒ "Curved Tip"

* Best blades :- belly shaped
  ⇒ used in making incision ⇒ no. 10, 15, 20, 21, 22, 23, 24

* Small incision :- 10 no. blade
* Large incision :- 22 & 23. "
  e.g Laprotomy

Emergency Code

→* Code blue ⇒ CPR, Cardiac arrest

→ Code Yellow ⇒ Missing Pt.

→ Code Brown ⇒ Chemical spillage. eg. Mercury / acid

*→ Code Black ⇒ Bomb threat

→ Code Red ⇒ Fire.

→ Code purple :- Abduction
↓
after surg., Pt. fall

→ code pink :- missing child → not Pt.

1st nsg priority :- Stop O_2 supply / source

IgA ⊕nt in body fluids (Breast milk, teass)

Eg :-

T.B. :- B.C.G. vaccine :- artificial active

T.B. :- infection :- natural active

T.B. :- Rx. :- Ab. therapy :- artificial passive

⇒ Active :- body ⇒ Ag. participation

⇒ Passive :- (Ab.)

Natural | Artificial → Lab.

- Mother to Baby :- IgG, IgA :- Natural passive
- natural infections / disease :- natural active
- artificially prepared antibodies :- artificial passive
- vaccines :- artificial active (Ag) ⇒ active

END