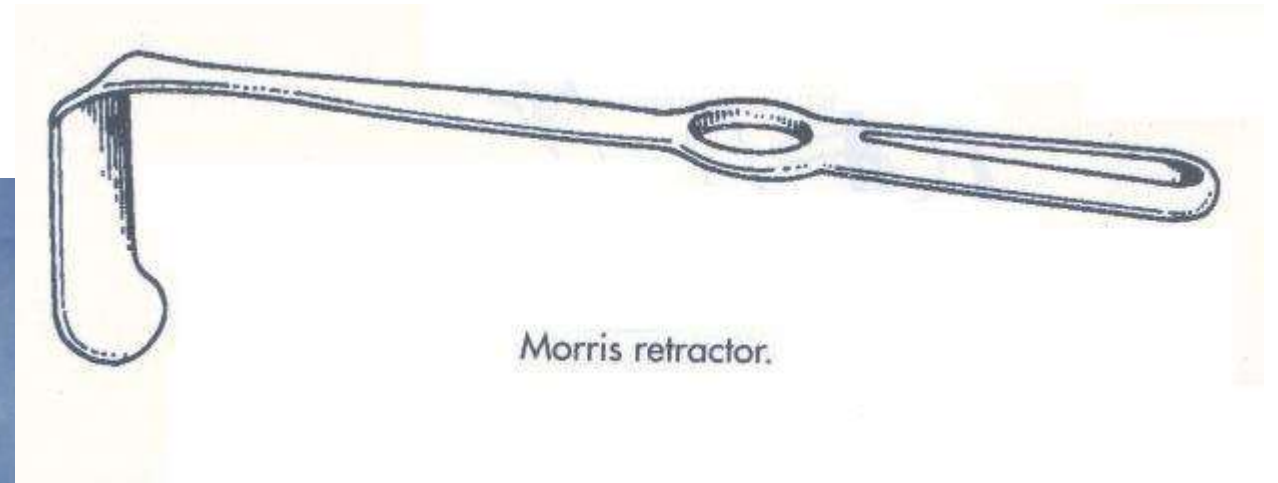


# Instruments

Surgery

# Retractor

# Morris abdominal wall retractor



# Morris abdominal wall retractor

- In laparotomy
  - Retract abdominal wall for better visualization
  - Retract intraabdominal viscus coils of intestine

# Kellys retractor



# Kellys retractor

- Retract liver bladder uterus

# Deavers curved abdominal retractor

'?' shaped



# Deavers curved abdominal retractor

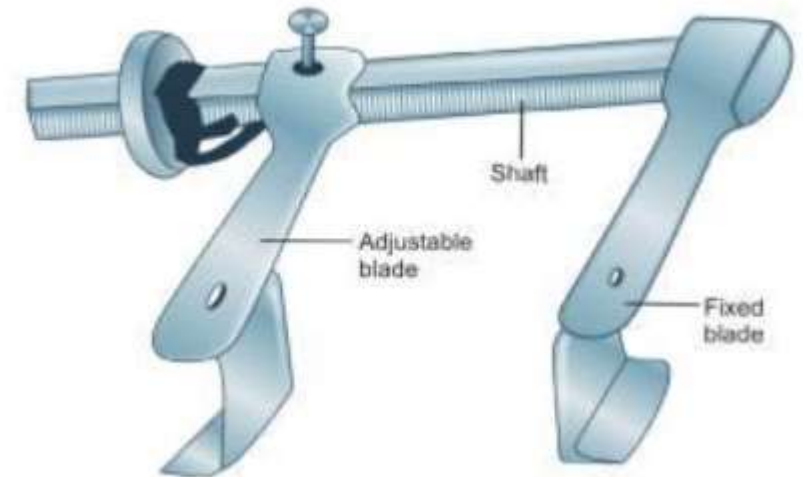
- retract solid organs like liver spleen kidney
- Retract abdominal wall
- Atraumatic
- Adequate exposure



# Rib retractor



Retract ribs in thoracic  
sx



# Langenbeck retractor



Skin soft  
tissue

# Langenbeck retractor

- Used in superficial surgeries & hernia surgeries
- retract skin superficial fascia

# Jolls thyroid retractor



# Jolls thyroid retractor

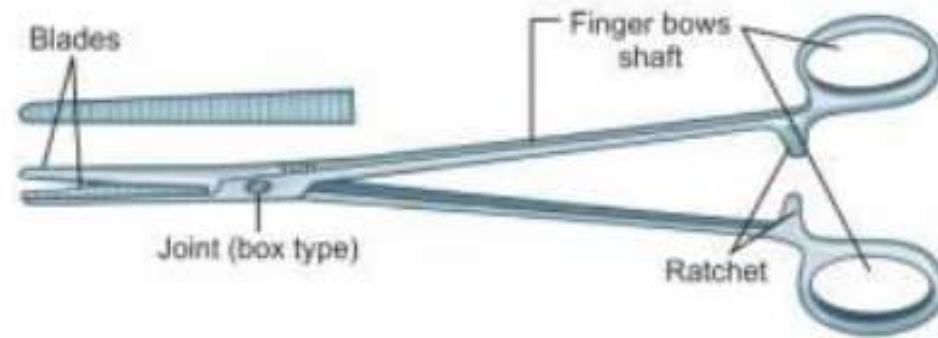
- Self retaining
- To hold & retract upper & lower skin flaps

# Self retaining retractor



# Forceps

# Parts





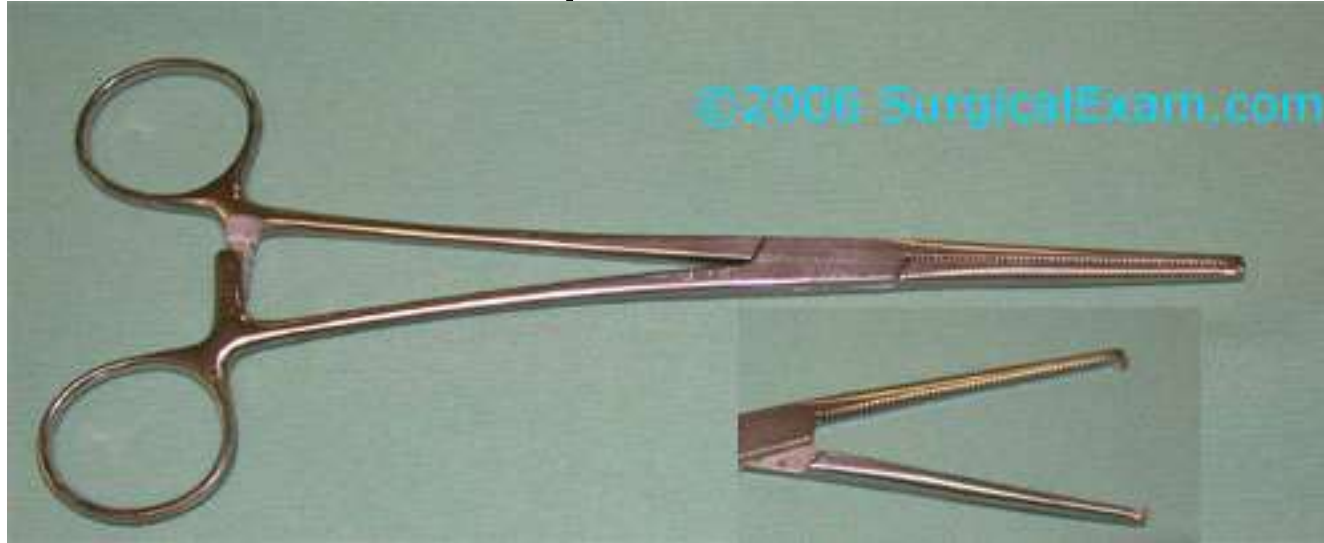
# Artery forceps / haemostat

- Small → mosquito / Halsted
- Medium → spencer well
- Large → bailey forceps

Suturing  
Catch hold of bleeding points  
Straight/curved



# Kockers forceps –toothed



- With tooth & transverse serrations
- can be straight / curved



# Right angled forceps



# Right angled forceps



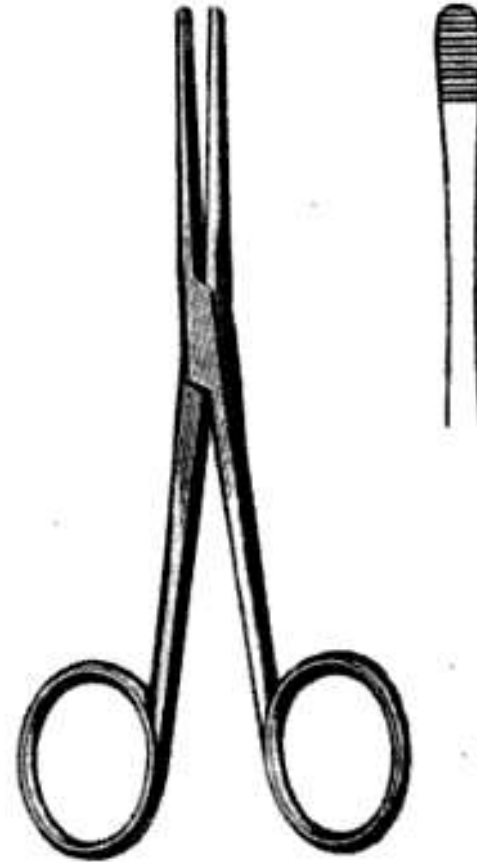
# Listers sinus forceps

- No lock
- To prevent permanent damage to neurovascular bundle
- Hiltons method of abscess drainage



**What is *Hilton's method* for drainage of *abscess* ?**

During drainage of **abscess** situated in important areas like axilla, groin there is chance of injury to the underlying major vessels and nerves if adequate care is not taken. In drainage of **abscess** in such location the skin and the subcutaneous tissues are incised with a knife. The deep fascia is not incised with a sharp knife but is pierced by thrushing a sinus forceps through the deep fascia and the sinus forceps is then opened up to enlarge the opening in the deep fascia for easy drainage of pus. This is **Hilton's method** of drainage of **abscess**.



**Lister's sinus forceps.**



# Listers vs mosquito

No lock



# Needle holding forceps



Criss cross striations

Length of blade = length of box joint



# Suprapubic cystolithotomy forceps



Concave inner surface with spicules help in holding stones without crushing them

# Desjardins choledocholithotomy forceps



No locks

curved tips

remove stones 4m kidney ureter renal pelvis

# Lung holding forceps



# Lanes forceps

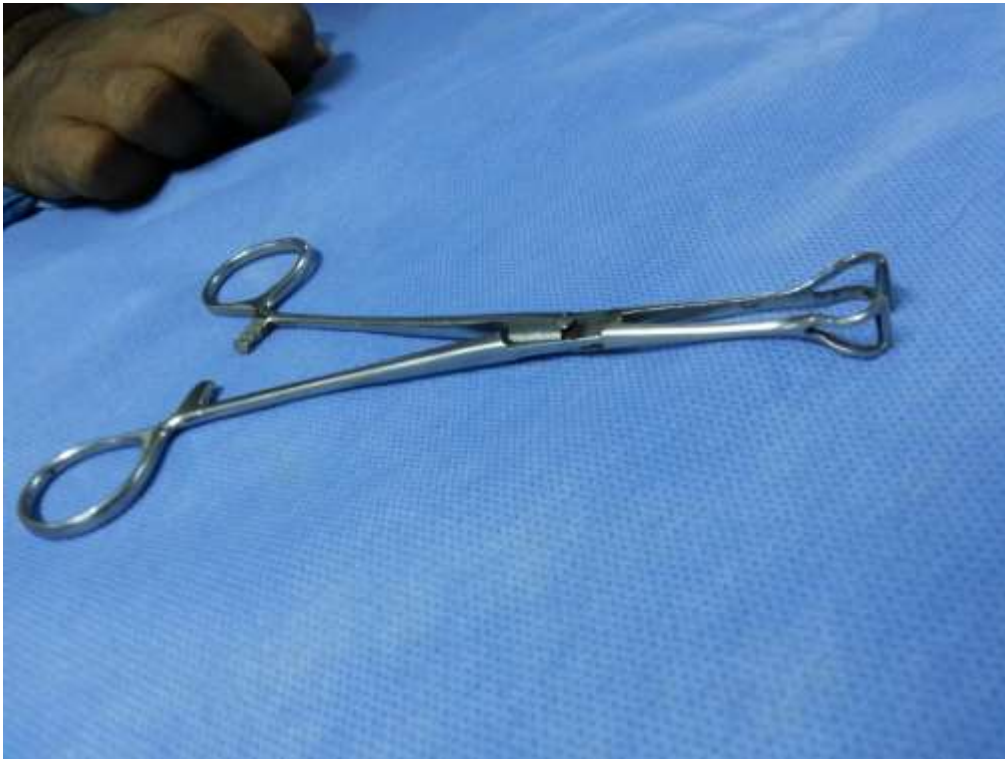
- More tissue can be held
- In MRM







# Babcocks forceps



Hold bowel fallopian tube appendix (delicate viscera)  
In gynaecology to hold fallopian tube  
Less traumatic

# Allis tissue forceps



# Cheatles forceps



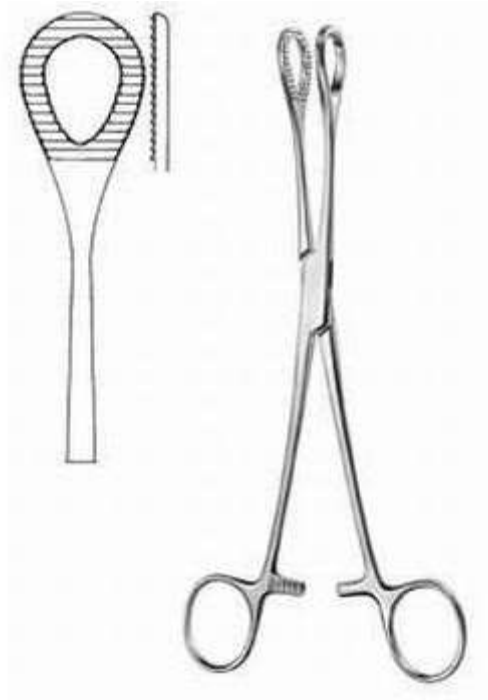
Hold cotton gauge



# Cheatles forceps

- No lock
- Heavy metallic with curved blades
- uses
  - Used to pick sterilized instruments & drapes to avoid touching
  - Transferring from one tray to another
- Kept in savlon

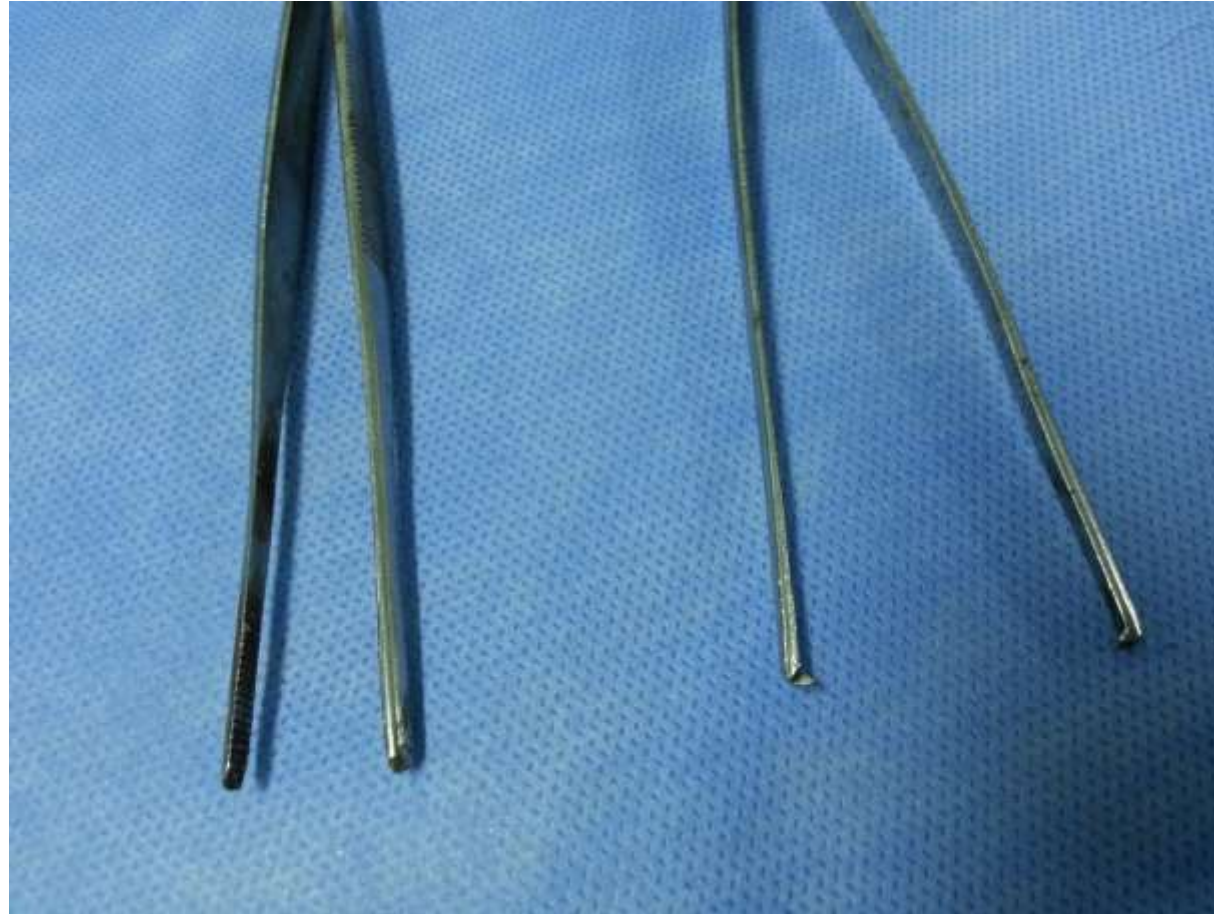
# Sponge holding forceps (rampleys swab holder)



# Sponge holding forceps

- Draping skin
- Holding gall bladder in cholecystectomy
- Hydatid cyst removal

# Untoothed(plane) & toothed dissection forceps



# Plane (non-toothed) dissecting forceps

- To hold delicate viscera, hernial sac, bleeding vessels & nerves

# Toothed forceps

- Hold tough structures like skin scalp rectus sheath while suturing

# Clamps

# Doyens gastrointestinal occlusion noncrushing type clamp



Vascularity is maintained to the intestine  
longitudinal striations



# Lanes twin anastomosis clamp

- Gastrojejunal anastomosis
- One each for stomach & SI



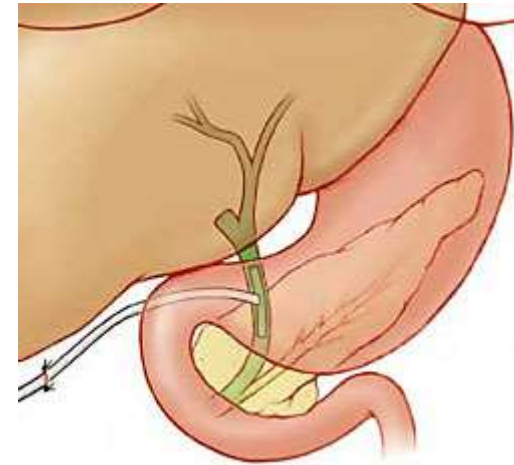
# Payrs crushing clamp

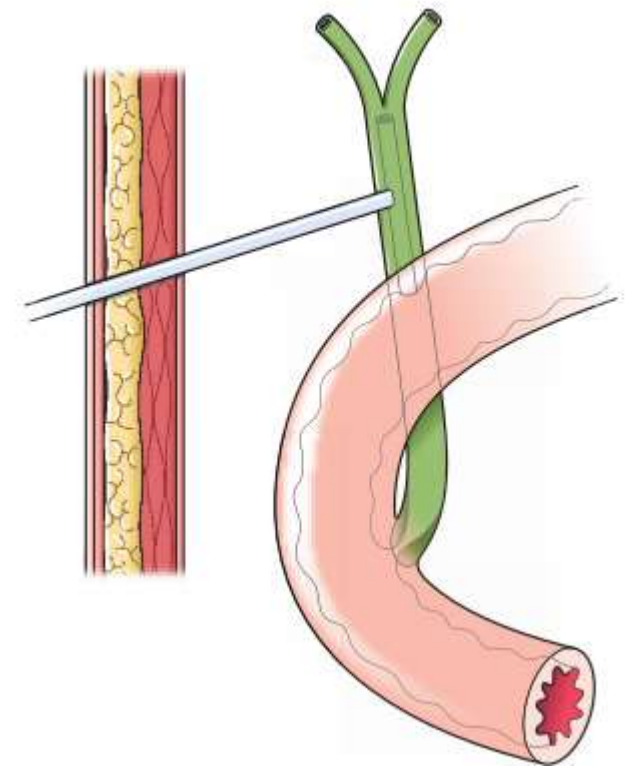
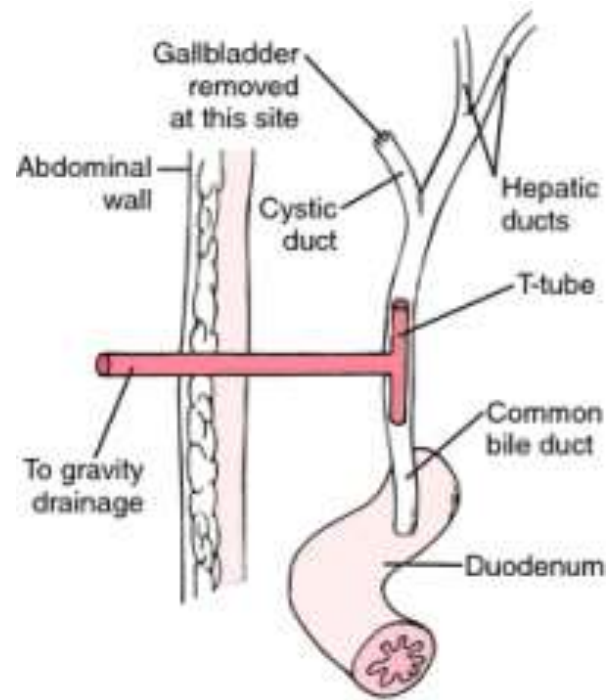
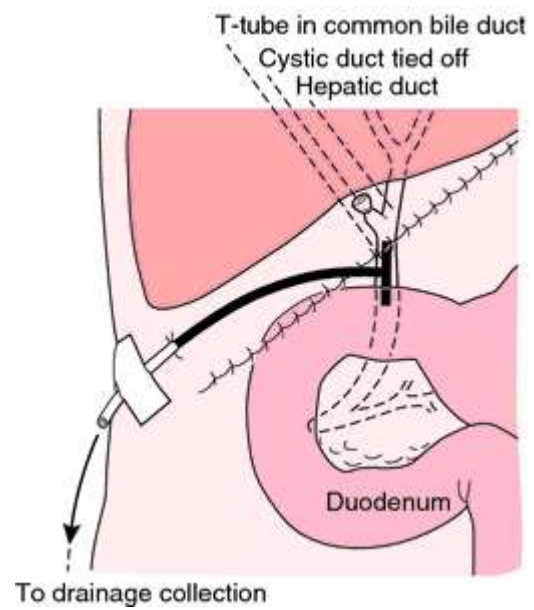
Crushing b4 suturing



# Tubes

# T tube





# T tube use

- After exploration of the common bile duct, a T-tube may be inserted into the duct which allows bile to drain
- while the sphincter of Oddi is in spasm postoperatively.
- Once the sphincter relaxes, bile drains normally down the bile duct and into the duodenum. To assist choleresis, it is often advisable
- to convert the lumen of the limb of the T into a gutter, which
- also facilitates removal

# Removal

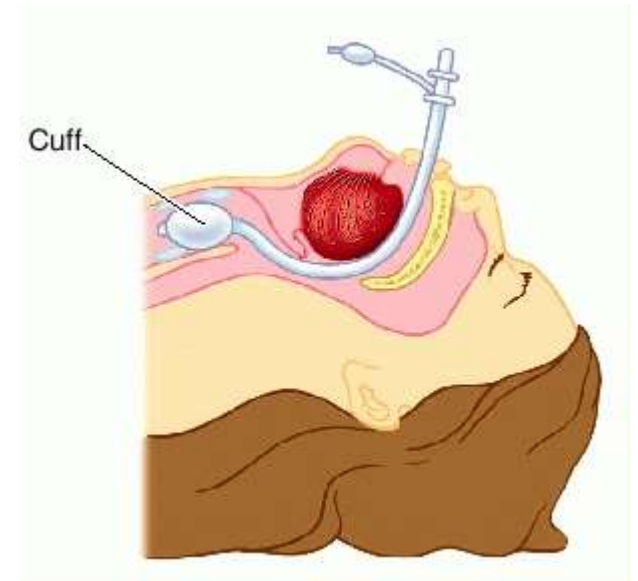
- Kept for 7-10 days
- Cholangiogram b4 removal
  - To see there is free flow of bile into the duodenum and that there are no retained stones
- Just pull to remove

# Cuffed endotracheal tube

To maintain airway

6.5-8.5 (size)

- Cuff
  - Px aspiration
  - To keep it in position
- Filled with air (not with NS as it may aspirate if ruptures)
- Uncuffed in paed
- In head injury (GCS <8)





# Ryle's tube

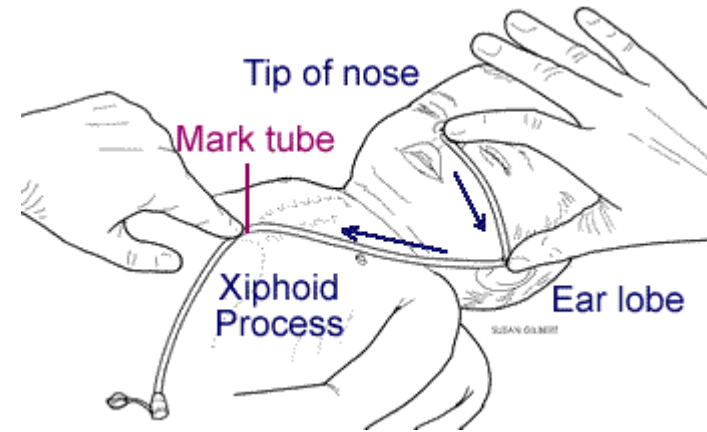
105-110 cm

Dia 10 12 14 16

Barium / pb shots at tip → radiopaque → detect location

Blue line → radio opaque

Multiple side holes } drainage



4 markings (dist in cm 4m upper incisor)

40 cm → gastroesophageal jn

50 cm → body of stomach

60 cm → pyloric region

70 cm → 1<sup>st</sup> part of duodenum

# Ryles tube

- In
  - Therapeutic
    - Feeding } comatosed pts
    - Aspiration } GOO intestinal obstn, perform
    - Saline load test } GOO
    - esophageal varices
    - Poisoning except acid poisoning
  - Diagnostic
    - Gastric fn test
  - Prophylactically in gastrectomy
- c/l
  - # of cribriform plate → meningitis



# Jacksons tracheostomy tube

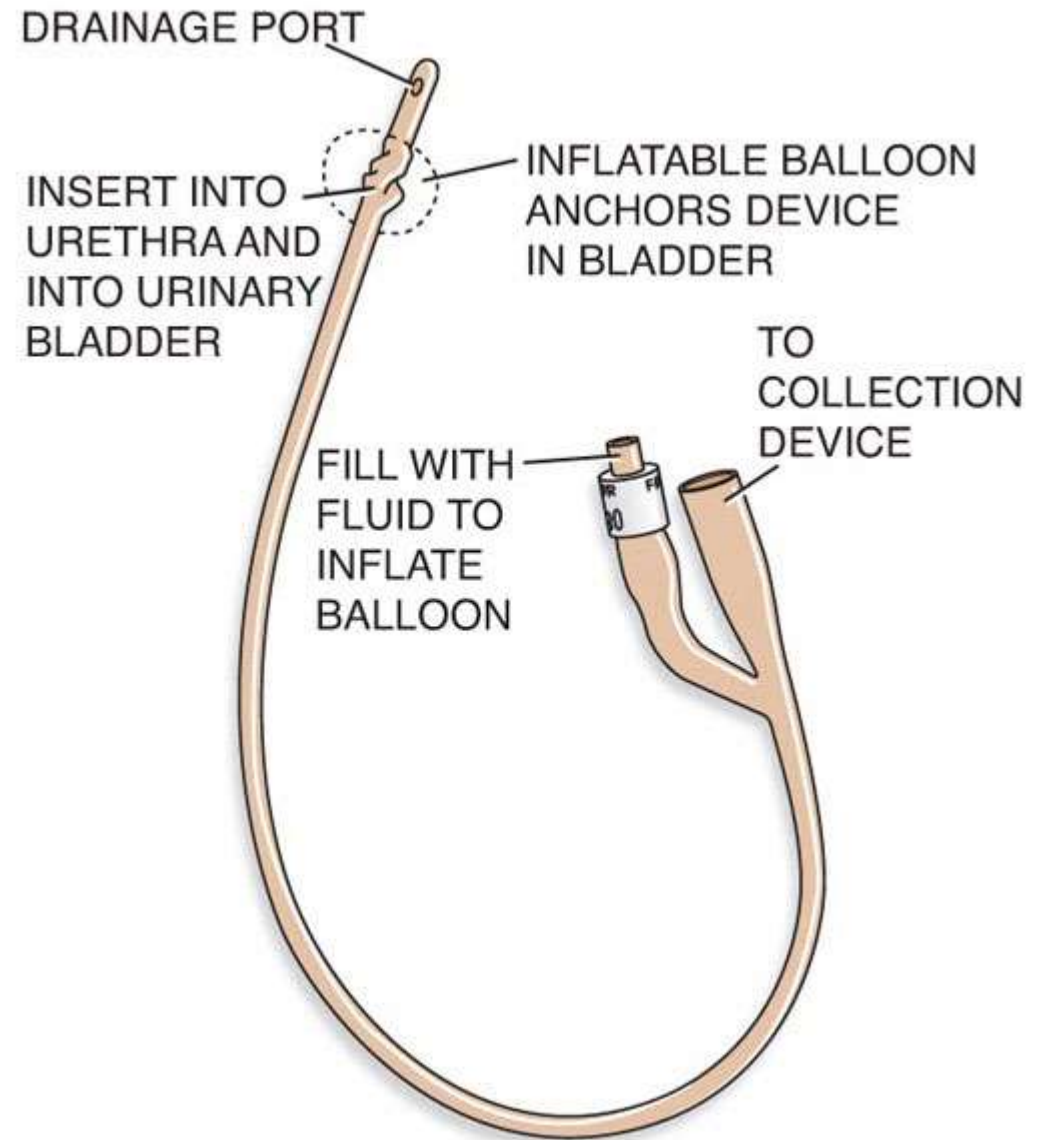
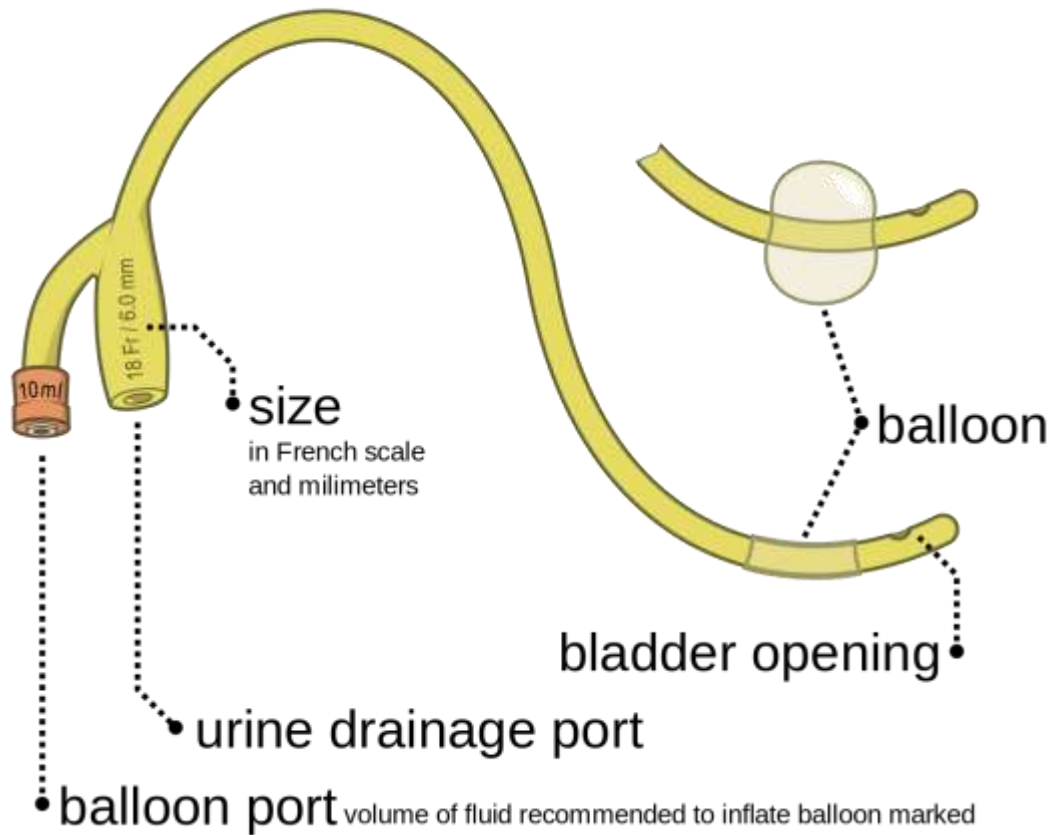


# Catheter

# 3 way & 2 way foleys catheter



# 2 way Foleys catheter



- Use 5 ml distilled water (NS will crystallise) for inflating balloon

# 2 way Foleys catheter

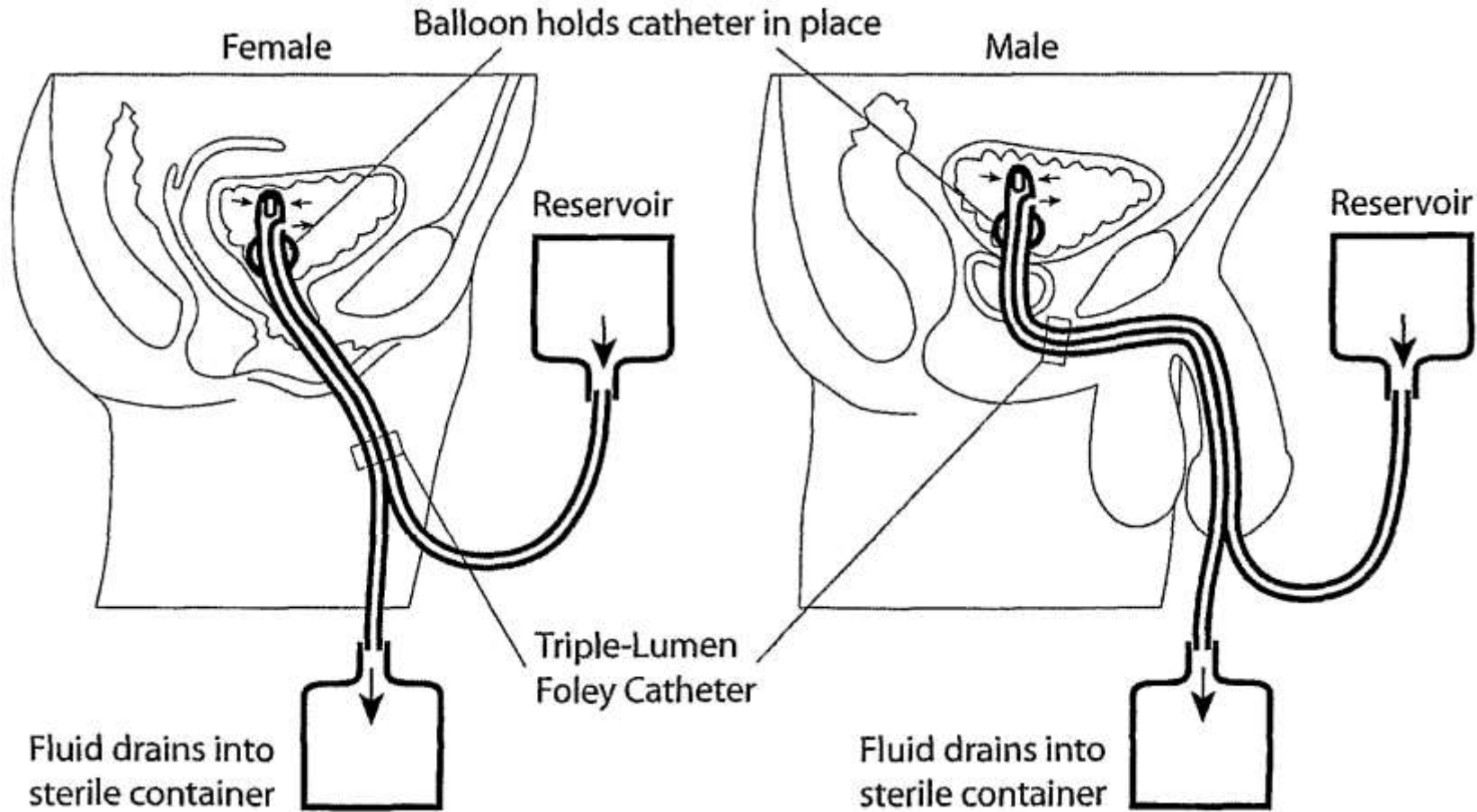
- Uses
  - Urological
    - Continous bladder drainage
    - Supra pubic drainage
    - Measure urine output
    - Urinary tract injury → hematuria
    - Intravesical chemotherapy bladder ca
  - Nonurological
    - EASI
    - Posterior epistaxis
- c/l
  - Rupture of urethra(blood at the tip of meatus)



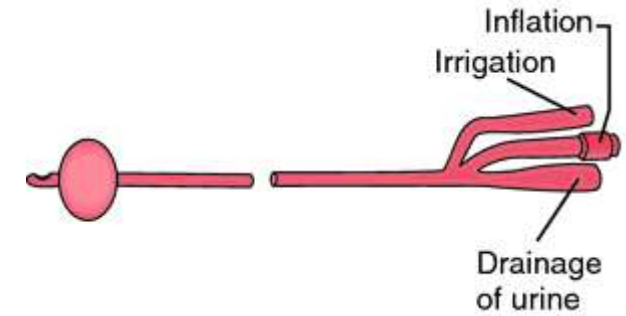
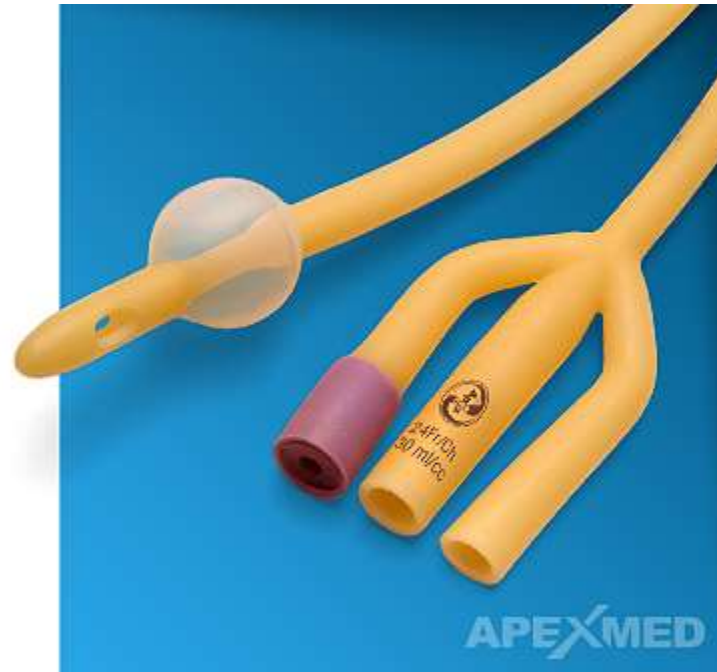
# 3 way foleys catheter

- In hematuria
  - Continous bladder irrigation to prevent formation of clots blocking drainage of urine
- Postoperative irrigation of bladder as In
  - TURP
  - Prostactic Sx

# 3 way foleys catheter



# 3 way foleys catheter



# Malecot's self retaining catheter

- Indian red rubber (→dermatitis )
- Used in suprapubic cystotomy
  - Also in tube thoracostomy
  - In operative drainage of peritoneal cavity



# Red rubber catheter

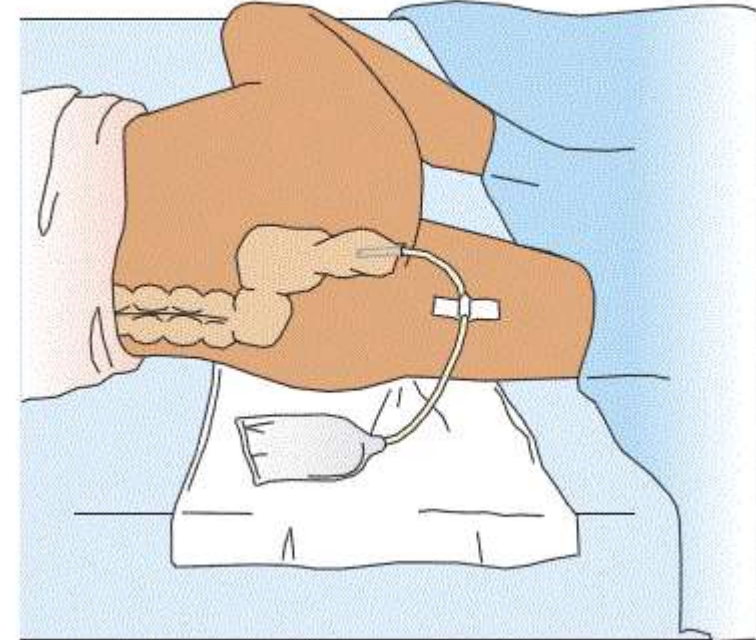
- Drain urine
- Administer chemotherapy
- Measure residual volume of urine



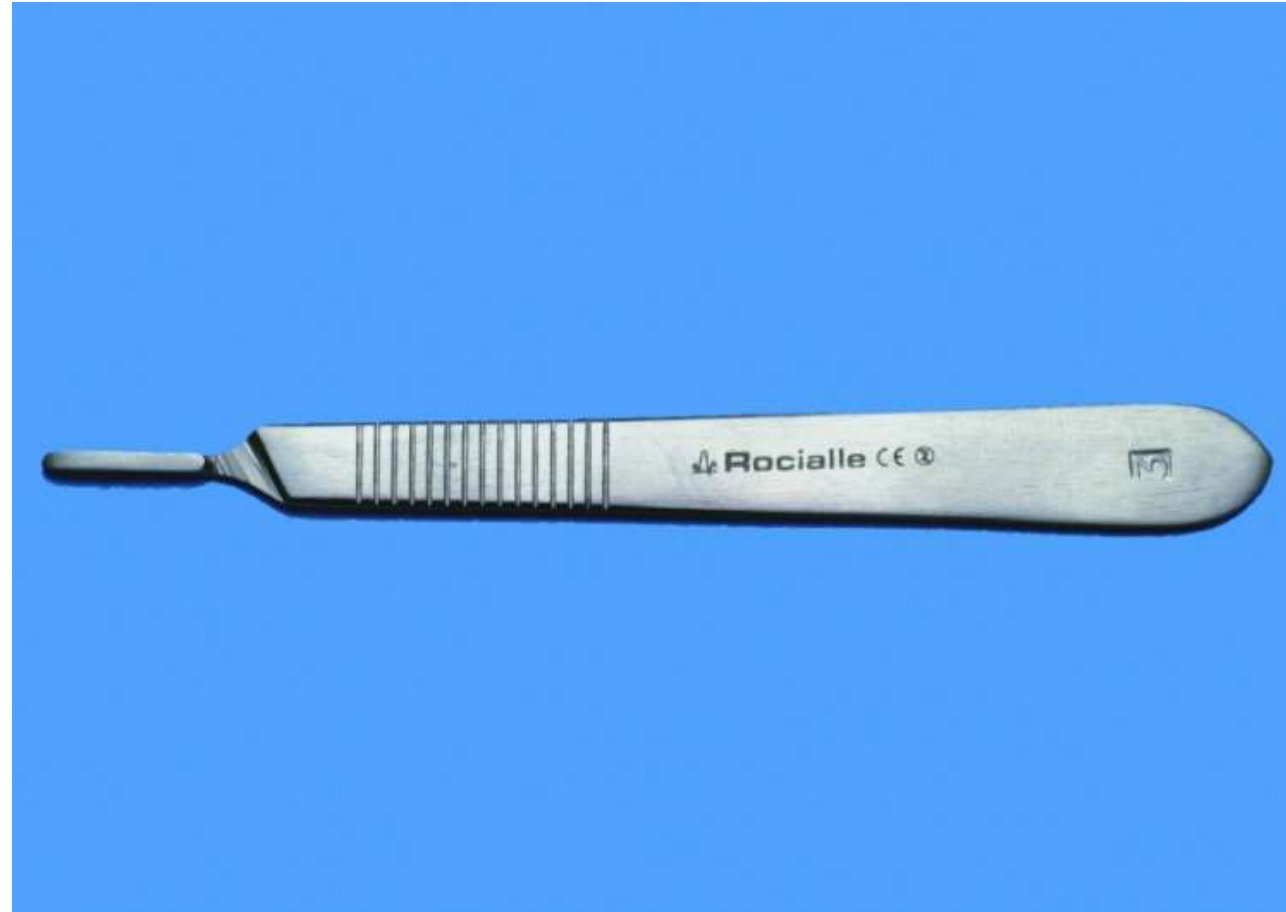


# Flatus tube

- In paralytic ileus
  - Relieve gaseous distension in large bowel
- Sigmoid volvulus
  - Decompress nonoperatively



# B P handle /bard parker handle





# Bp handle

- Pen holding
- Dinner knife holding

# Mayos Tissue cutting curved scissors



# Mayos Straight scissors /suture cutting

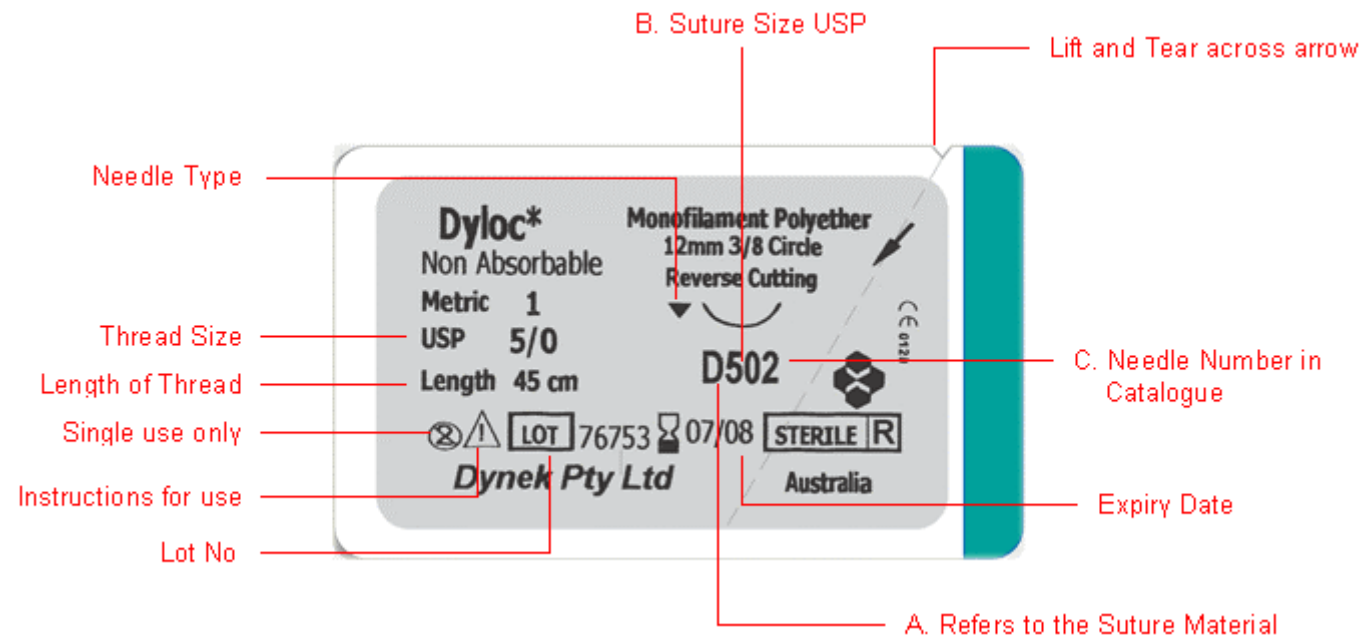


TONY 2010 MBBS

# Suturing

# Suture materials

- Silk } **black** braided
- Nylon } **black** monofilament
- Chromic catgut } **brown**
- Polypropylene } **blue**
- Polyglactin } vicryl } **violet} work horse /universal suture**



# Needles

- eye-/traumatic



**Closed eye**



**French eye**

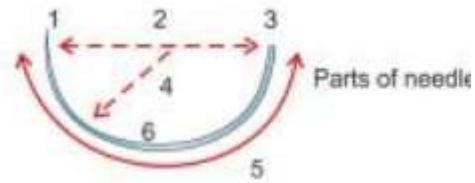


**Swaged**

- Eyeless/attraumatic

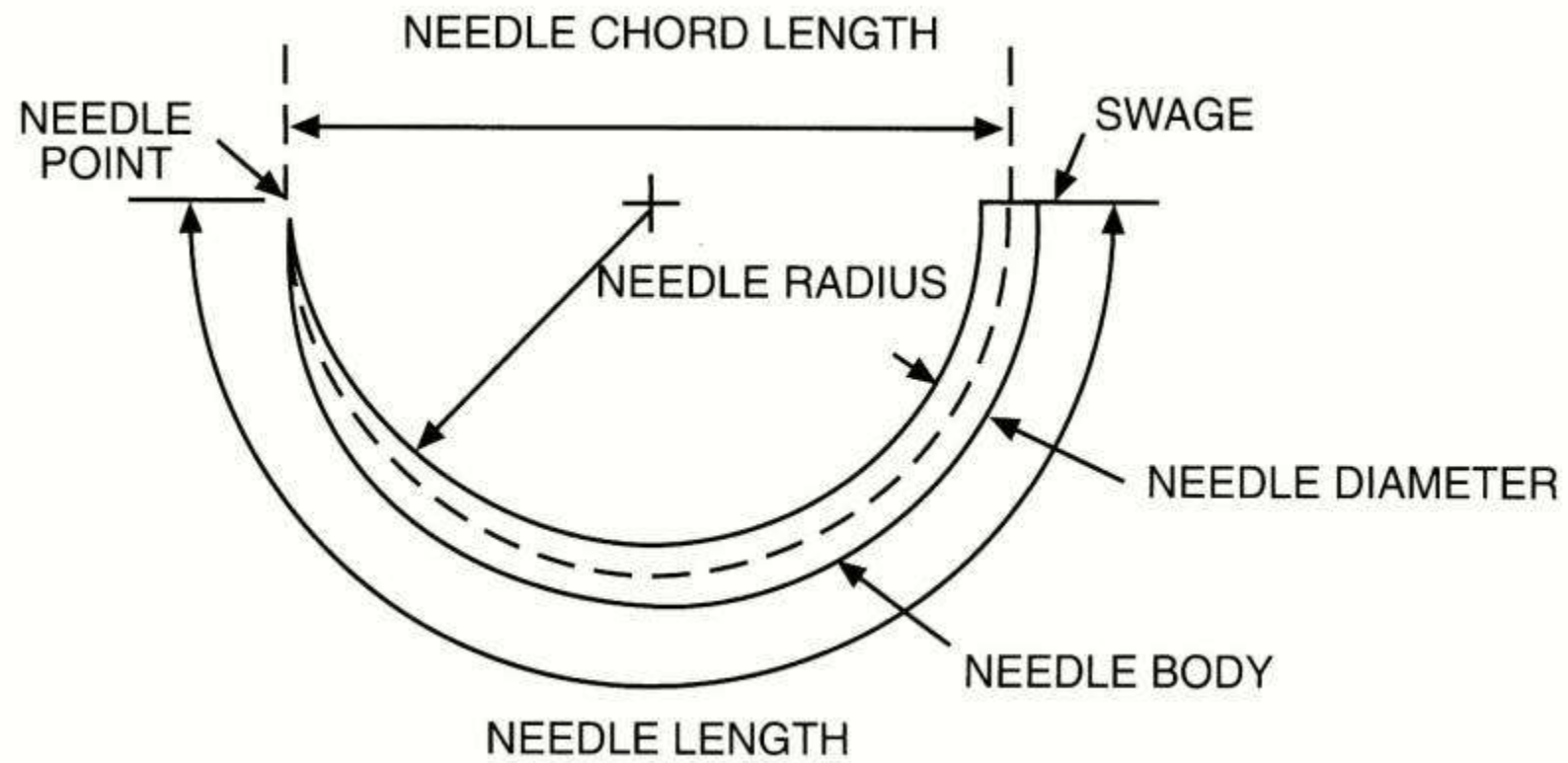
# Parts of a suture needle

- Eye(if with eye) /swaged end
- Body (can be straight/curved)
- Needle point

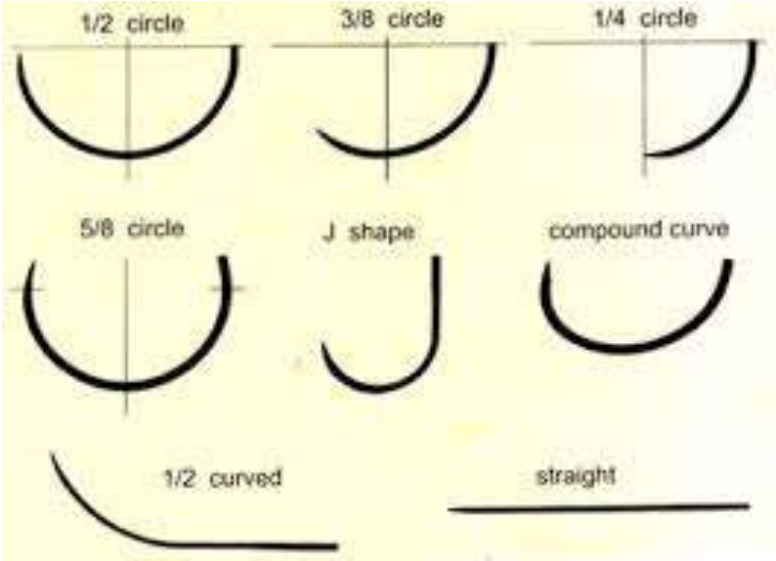





1. Needle point
2. Needle chord length
3. Needle suture end / eye
4. Needle radius
5. Needle length
6. Needle body



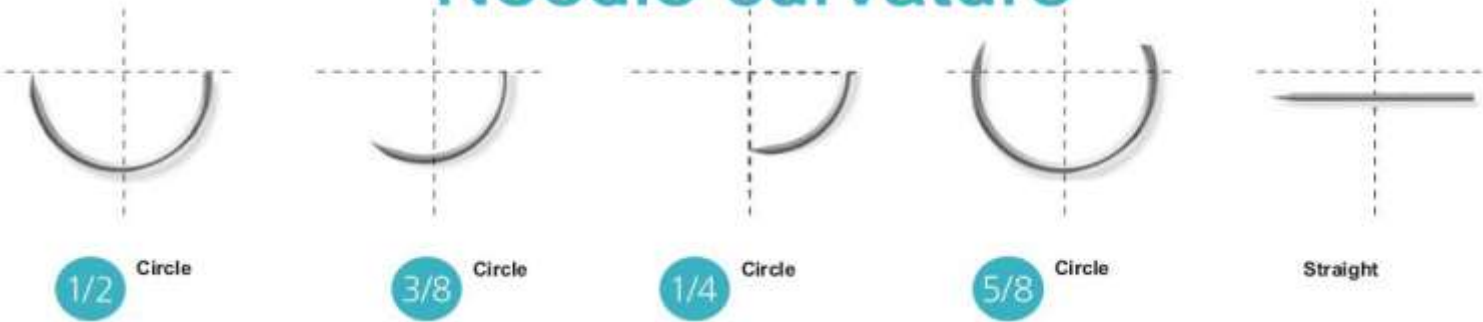


# Types of needles



-  Round body
-  Conventional cutting
-  Reverse cutting

## Needle curvature



- **Round-bodied needles**

- gradually taper to a point, while triangular needles have cutting edges along all three sides.
- intestinal and cardiovascular surgery
- Separate not to cut

- **Conventional cutting**

- cutting edge facing the inside of the needle's curvature,
- tough or dense tissue needs to be sutured, such as skin and fascia

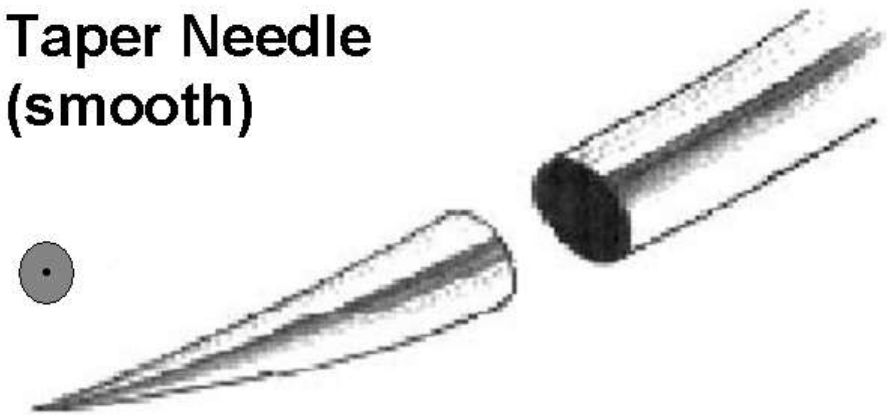
- **reversed cutting**

- cutting edge is on the outside

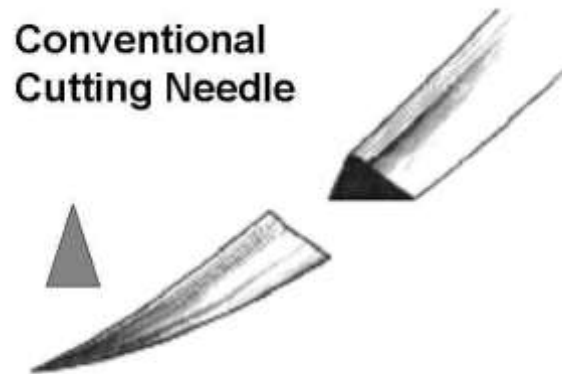
# Round bodied

- Taper needles are used for tissue that is easy to penetrate, such as bowel or blood vessels.

**Taper Needle  
(smooth)**

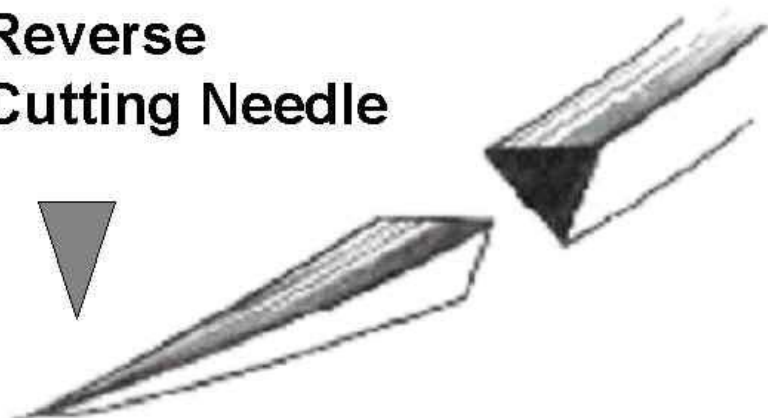


# Cutting needles



tough tissue, such as skin.  
easier to penetrate tough tissue.

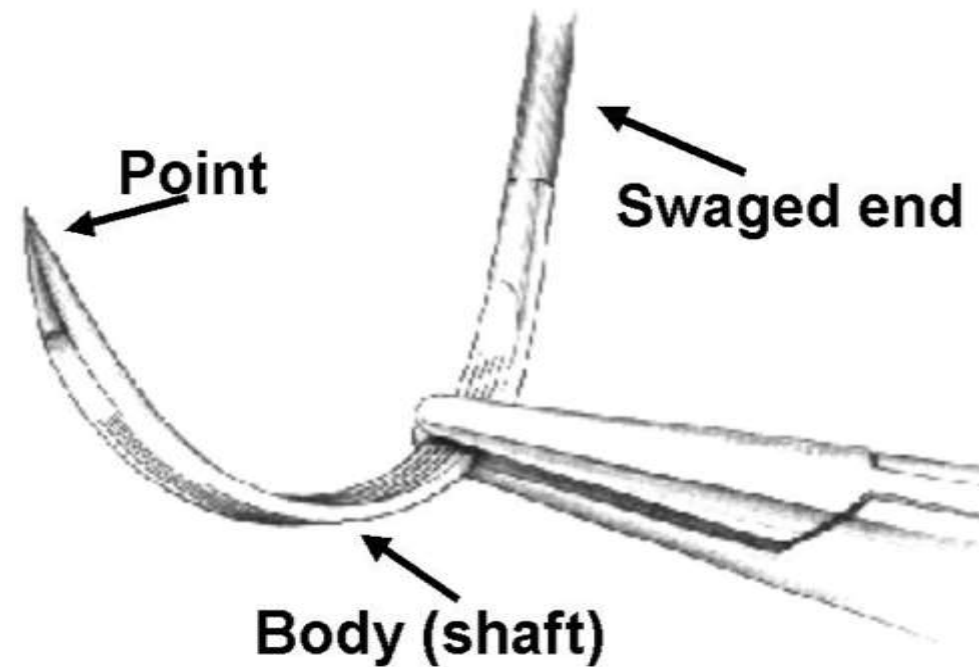
**Reverse  
Cutting Needle**



# Technique

The needle should be grasped in the tip of the needle holder **about 2/3 of the way back from the point.**

Grasping further back at the swaged end tends to weaken the needle and its attachment to the suture, and you are likely to bend the needle.

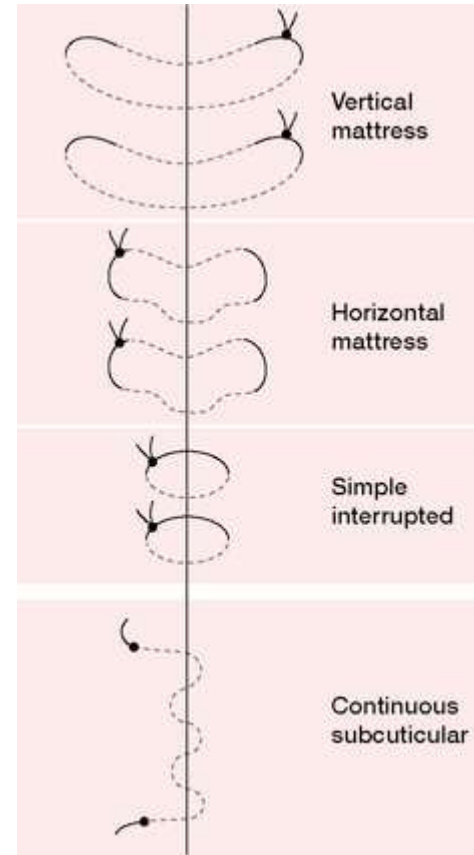


- Hand-held straight needles
  - skin, although today it is advocated that needle holders should be used in all cases to reduce the risk of needle-stick injuries.
- Half circle needles
  - the gastrointestinal tract,
- J-shaped needles
  - vagina
- quarter circle needles
  - eye
- compound curvature needles
  - oral cavity,



# Suture technique

- Interrupted
- Continuous
- Mattress
  - Vertical
  - Horizontal
- Subcuticular

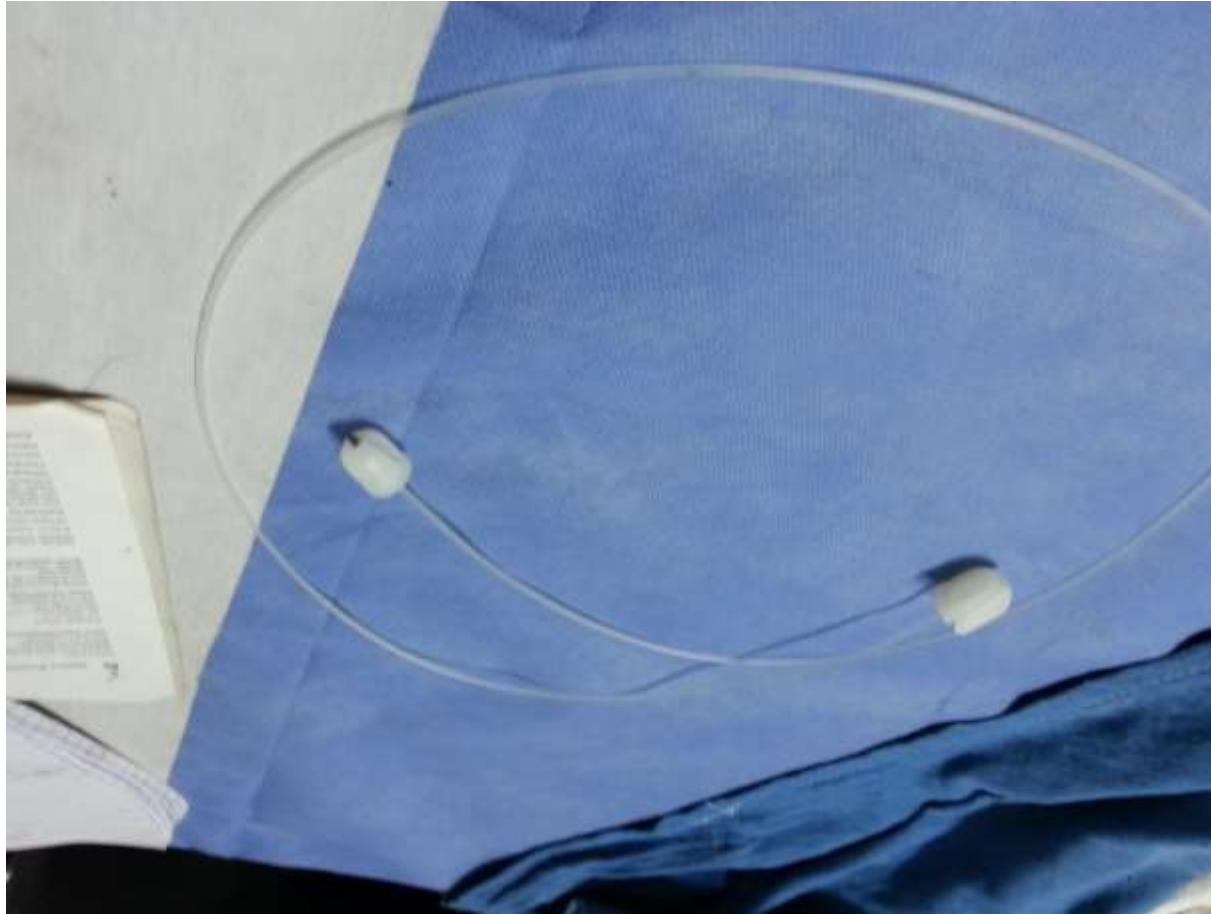


# Skin stapler

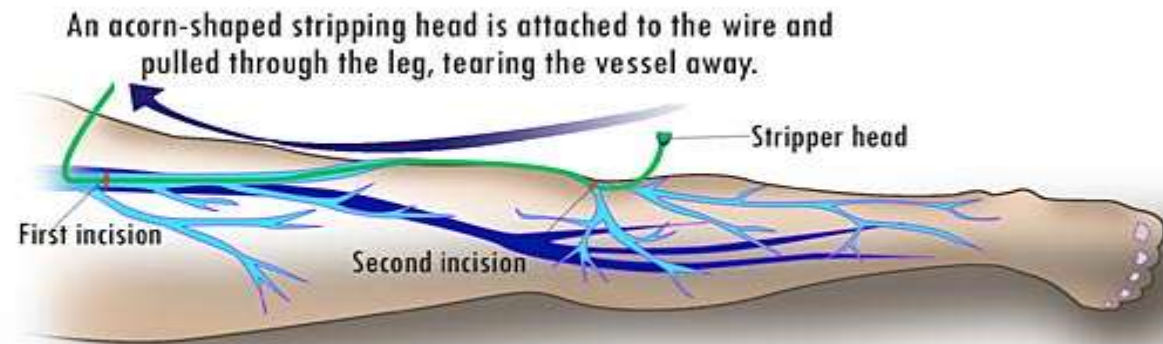


# Varicose vein

# Plastic stripper for varicose vein

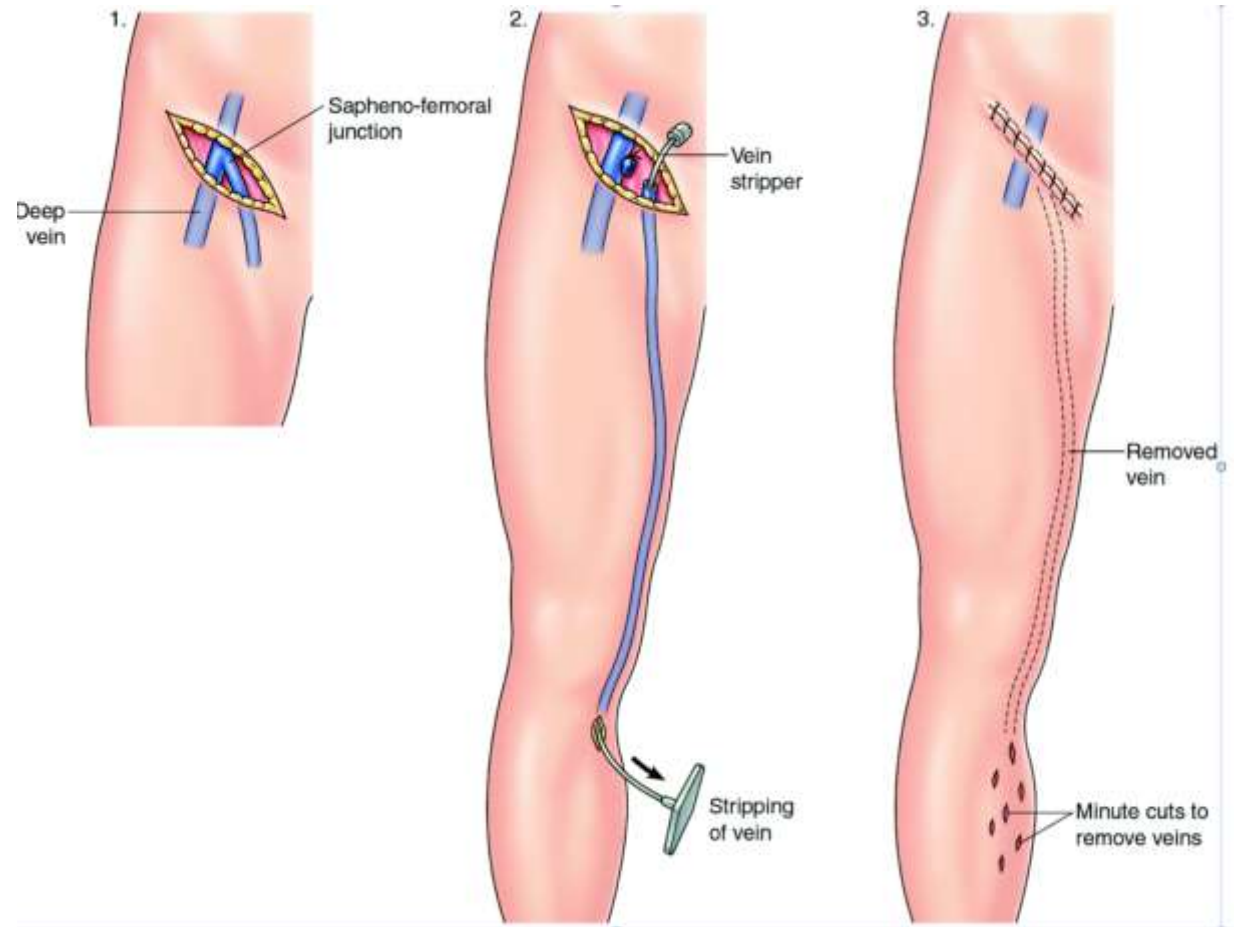


- 2 ends - olive & acorn end
- Only upto knee to avoid injury to sural nerve



# Other strippers

- Meyers
- Babcocks
- Rigid metal pin (oesch)



# Esmachs compression bandage



# Esmarch s

- Transparent → vein can be seen
- Uses
  - Perthes test
  - Pratts test
  - Tourniquet in ortho
  - After stripping to prevent hematoma



others

# Proctoscope / Kelly's rectal speculum

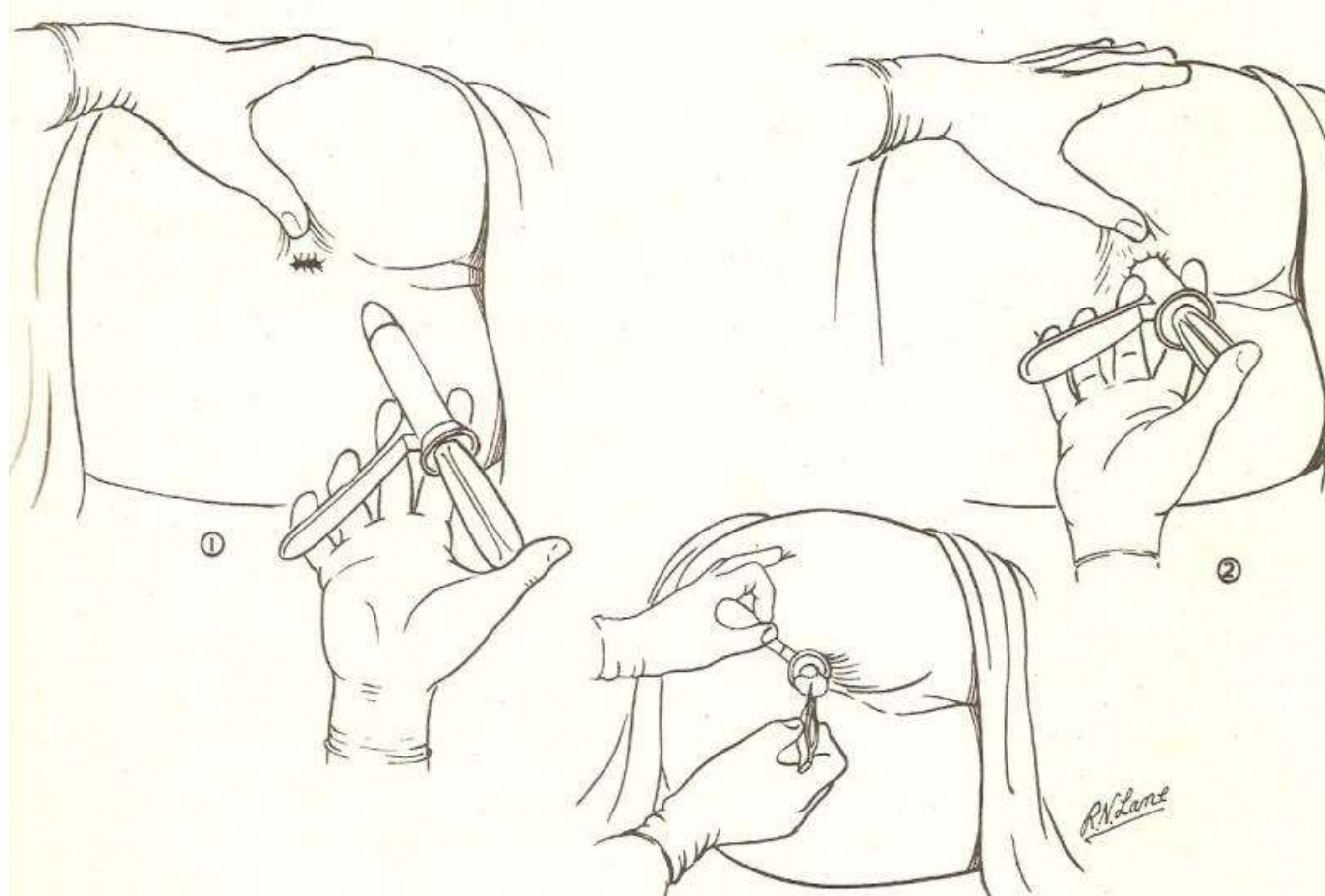
- 2 parts → obturator & outer sheath

Obturator for easy insertion  
with out injuring mucosa



# Proctoscope / Kelly's rectal speculum

- Used to Visualise anal canal & lower 3<sup>rd</sup> of rectum
- Procedure
  - Left lateral / Sims position
  - Directed 2ward umbilicus
  - PR examn b4 proctoscopy

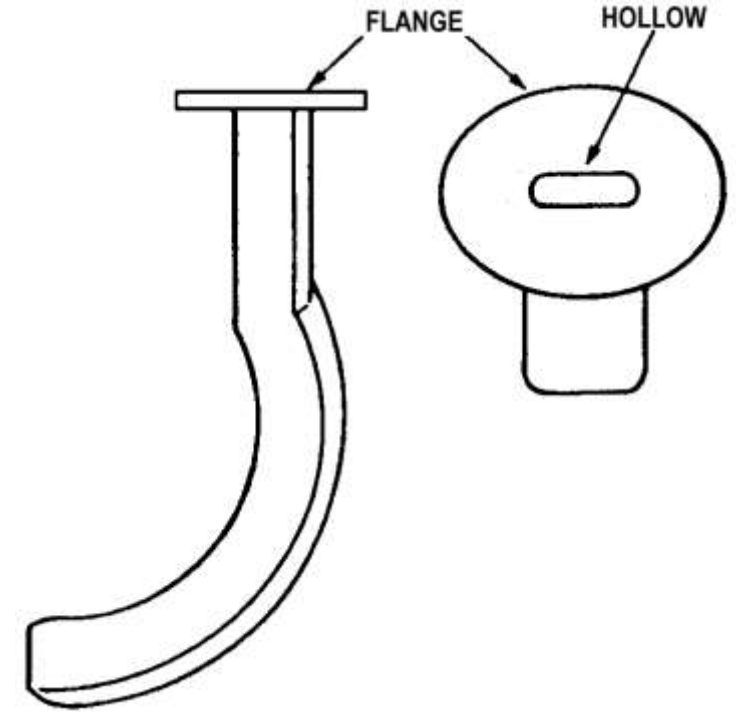


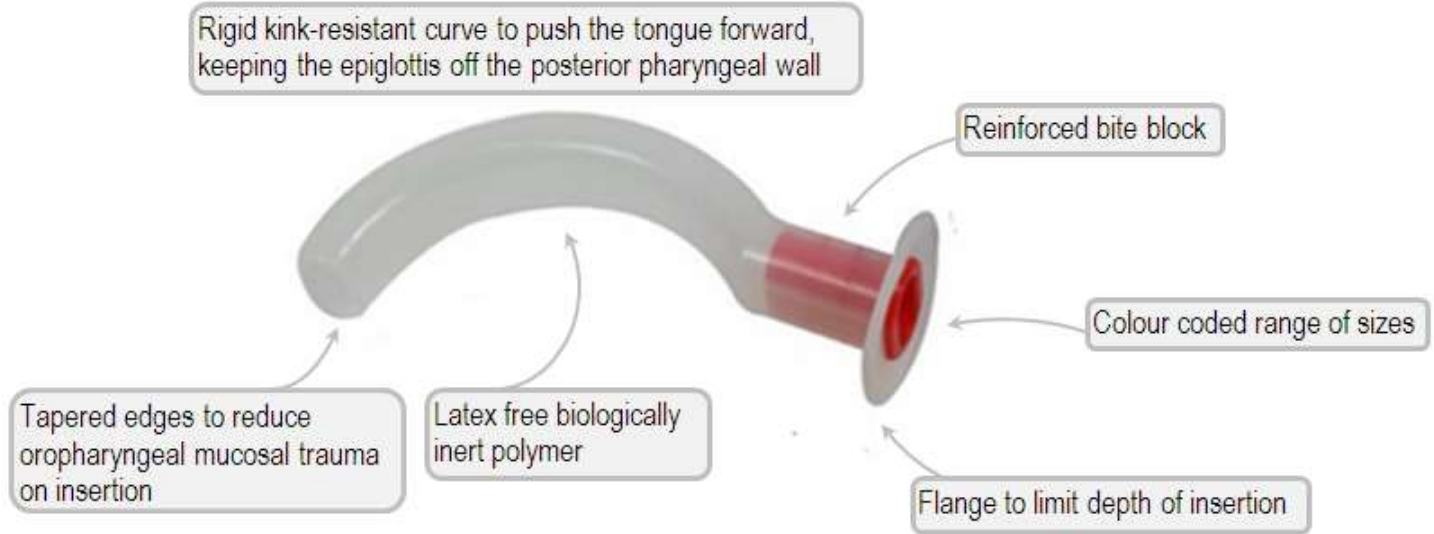
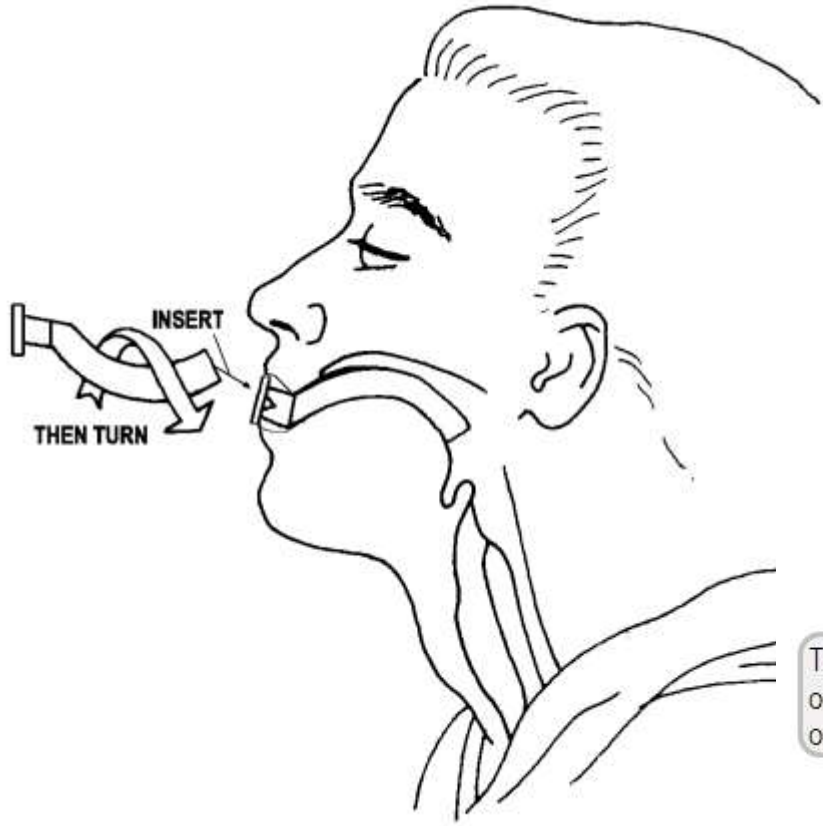
# Proctoscope / Kelly's rectal speculum

- In
  - **Diagnostic**
    - Piles / haemorrhoids } bulge in to cavity on retraction
    - Polyp
    - Ca anal canal / lower rectum
  - **Therapeutic**
    - Injn of sclerosant
    - Excision of polyp
    - Drainage of abscess
- C/I
  - In a/c fissure in ano } severe pain

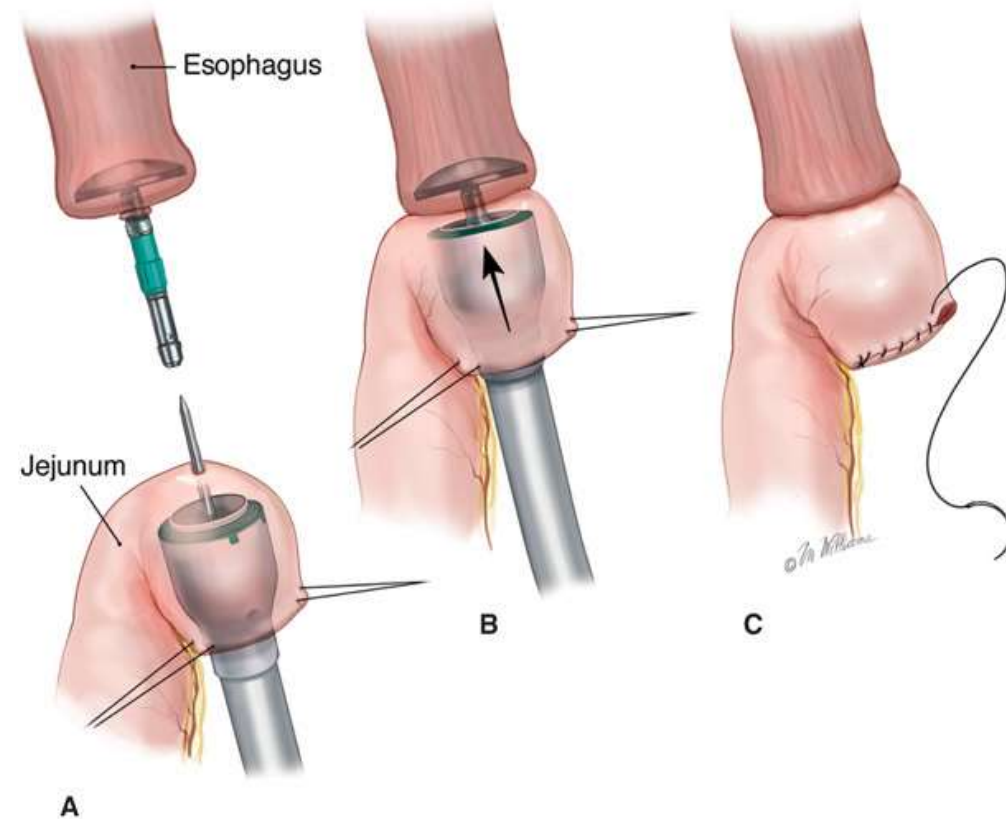
# Guedel airway

- Prevent tongue from falling backwards
- Opening } aspiration





# Circular stapler



Source: Sugarbaker DJ, Bueno R, Krasna MJ, Mentzer SJ, Zellos L: *Adult Chest Surgery*:  
<http://www.accesssurgery.com>

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# Circular stapler

- End to end Intestinal anastomosis as in lower anterior resection
- Stapler haemorrhoidopexy
  - 3<sup>rd</sup> / 4<sup>th</sup> degree haemorrhoids





# Mouth gag



# Moynihans Towel clip

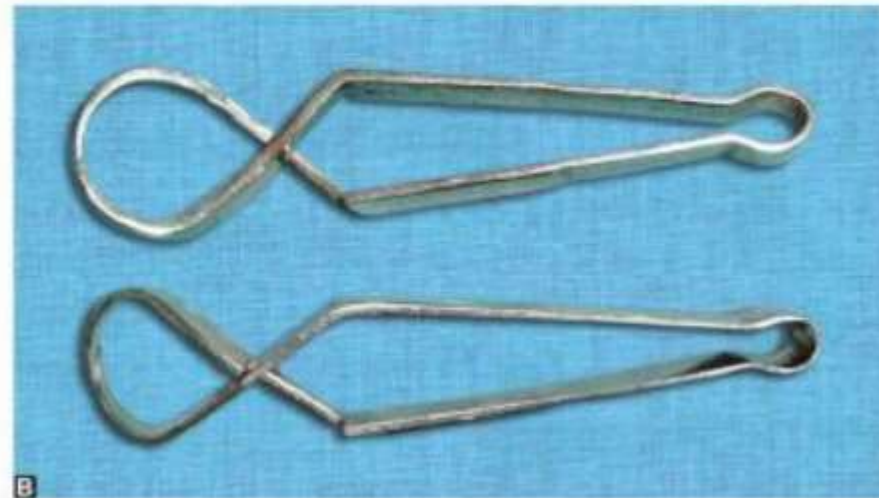


Keep drapes in position  
Used as tongue holder if no  
other instrument not available

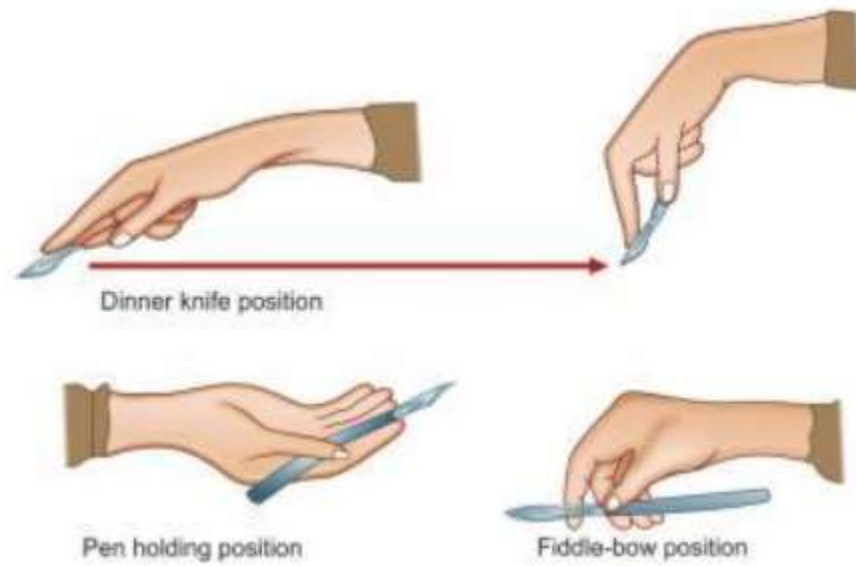
# Doyens towel clip



A



B





# Syringe

