- Documenting in record-book or theatre computer.

Theatre nurse should not discuss or reveal about the procedure or technique done outside theatre with anybody. It is surgeon's duty to explain about the patient's condition, procedure done and problems. She will never comment about anything in theatre.

Septic Operation Theatre

- All infected cases like abscess drainage, amputation for gangrene, slough excision, dressing of large ulcers should be done in a separate OT. Otherwise clean surgeries may get infected. It is especially important when orthopaedic surgeries are going on.
- Entrance to septic OT must be separate from that of main OT.
- Staffs working in septic OT should not enter main OT.
- Instruments should be kept separate for septic OT.
- Drapes, towels, mops should be placed in a plastic bag after use and sent to laundry immediately. It should be labelled as *infected.*
- Circulating nurse should wear gloves while working in a septic OT.
- Disinfection of shoes is essential once it is used in septic OT.
- Daily disinfection of OT is essential.
- Swab culture of the OT materials at regular intervals is needed.
- Separate Boyle's apparatus is used in septic OT.
- Dress is changed when one comes out of septic OT and enters the main OT.

Precautions in an Operation Theatre

- In the absence of proper safety measures and precautions, OT is a place where one is prone for accidental trauma and injuries, which may be danger to patient as well as theatre personnel.
- Main danger exists in some anaesthetic agents, which may cause life-threatening explosions. It may cause burns, loss of vision, hearing loss, damage to OT, may also sometimes cause death. Ether is one, which can be explosive.
- An OT has got high power electric supply for its basic needs like aircondition, lights, machines, cautery, suction apparatus, other modern instruments like laparoscope, C- ARM, etc. Because of the presence of too many electric circuits and possibility of dangers of static electricity, theatre staff should take enough precautions to prevent any electric injury to patients and theatre personnel.
- Good earthing is essential.
- It is ideal to use theatre dresses made of cotton (cotton clothes) to patient, surgeon and nurses. Drapes and other materials should also be made of cotton.
- Rubber should be used wherever required like in wheel of trolley, Boyle's apparatus, mattresses, floor, wall of the theatre.
- When cautery is used, electric shock is common and so enough precautions has to be taken. Often cautery burns can occur to the patient.
- An electrician should be immediately available whenever there is problem like power failure, short circuit, default in any of the electrical instruments.

Beware of possible anaesthetic explosions and electrical injuries in OT.

Most important people in OT

- First and foremost is the ***patient***
- Next are surgeon and anesthetist
- Essential are theatre nurses and theatre assistant
- Surgery is a team work. All are important

SURGICAL PROCEDURES

NARY CATHETERISATION

eters used—simple non-self retaining red er catheter, Foley's self retaining catheter, on's catheter, metal catheter.

cations

Retention of urine due to BPH, stricture urethra, trauma (with all care and precaution gently one trial is done).
In major surgery postoperative period.
In acute conditions and in shock patients To measure the hourly urine output.

ses of Retention of Urine

Bladder outlet obstruction.
BPH, carcinoma prostate.
Prostatitis, prostatic abscess.
Bladder carcinoma close to bladder neck.
Bladder stone obstructing bladder neck.
Hypertrophy of bladder neck muscle.
Stricture at bladder neck.
Causes at urethral level.
Urethral stricture- may be due to trauma or inflammatory (gonococcal/nonspecific) or neoplastic or after catheterisation/cystoscopy or after surgery (TURP/urethral surgery/ perineal urethrostomy).
Urethral stone.
Tumours.
Posterior urethral valve.
Urethral trauma.
Meatal stenosis.
Pinhole meatus/phimosis.
Other causes—
- Postoperative period.
- Postsurgery—of haemorrhoidectomy/ fissurectomy/fistulectomy.
- Spinal injury/spinal surgery/spinal anaesthesia.
- Drugs like anticholinergics, antidepressants or antihypertensives.

Foley's catheter is commonly used. Urosac bag, gloves, sterile towel, 2% xylocaine gelly and distilled water are needed.

Procedure

- Explain the patient about the procedure. Sterile gloves are worn after hand wash. Patient will be in supine position with legs apart. Genitalia are cleaned with povidone iodine solution. Draping is done using sterile towel.
- Prepuce is retracted and glans is cleaned again. 20 ml of 2% xylocaine jelly is taken in a syringe and pushed into the urethra through the external meatus.
- After 5 minutes, penis is held vertically (so that urethra gets straightened to make easier passage of the catheter) and Foley's catheter tip is lubricated with jelly and is gently passed into the urinary bladder. Urine flow through the catheter confirms that it is inside the bladder.
- It is advanced further more and balloon near the tip is inflated using distilled water. Air is not used for this purpose. Normal saline may get crystallised and so ideal is distilled water (Note: in endotracheal tube only air is used inflate the balloon. Water should never be used as if balloon bursts aspiration can occur). Quantity inflated should be noted in the case sheet. Usually 20 ml is used. It is actually written in the Foley's catheter. After inflation catheter is pulled out to confirm that balloon is inflated properly.
- Catheter is connected to urosac bag. Prepuce is placed in normal position otherwise paraphimosis can develop.
- In adult 16 F catheter is used. F-French unit- 16 mm circumference (Charriere unit). Usual Foley's catheter is kept for 7-10 days. If there is a need to keep catheter for more than 10 days then silicon coated Foley's catheter is used as it is least reactive. Foley's catheter is made up of latex. In children 10 F or 8 F is used.

- Three-way Foley's catheter is used to irrigate the bladder with normal saline/glycine solution continuously in post-TURP (Trans-urethral Resection of Prostate) or after bladder surgery or after bladder trauma.
- Foley's catheter often is reinforced with tension wires to prevent block and is called as haematuric Foley's catheter.
- Maryfield introducer is used often to pass the Foley's catheter into the bladder. It has got a curve with a groove over the convex part to accommodate the catheter.
- Balloon should be *deflated completely* before removal of the catheter otherwise urethral injury and haematuria can occur.
- In females labia majora are retracted apart to identify the urethral orifice to pass the catheter.

Complications of Catheterisation

- Infection.
- False passage.
- Bleeding.
- Inability to deflate the balloon while removing the catheter. In such occasions, following methods are used—
  - Inflating the balloon further with ether/air/water and bursting the balloon.
  - Passing guide wire of the ureteric catheter via the inflating channel.
  - After giving traction to catheter so as to make balloon nonmobile and fix, long, fine needle is passed per-abdomen in suprapubic place so as to puncture the balloon.

Causes for Inability to Pass the Catheter

- Urethral stricture, BPH.
- Non-cooperation by the patient.
- Meatal stenosis.

INSERTION OF A NASOGASTRIC TUBE

Indications

- For decompressing stomach in intestinal obstruction, after abdominal surgery. It prevents aspiration and distension of intestines.
- For gastric function tests.
- In gastric outlet obstruction to decompress the stomach and also to give stomach wash. Stomach tube is better (Ewald's tube) for this.
- For feeding purpose.
- *Baid test:* Passed Ryle's tube will be palpable per abdomen in pseudocyst of pancreas as stomach is stretched forward.
- Ryle's tube will not enter the stomach in Boerhaave's syndrome.

Procedure

- Procedure is explained to the patient. Usually no. 16 tube is used in adult. It is one meter long usually of plastic (earlier red rubber) with three lead shots in the tip. Lead shots in the tip make it easier to pass. (Infant feeding tube does not have lead shots). It has got different marking ring/rings (2, 3, and 4). First ring signifies O-G junction (40 cm). Two rings for body of stomach (50 cm), three for the pylorus (60 cm) and four for duodenum (70 cm).
- Xylocaine jelly 2 % is lubricated to the tube. It is passed one of the nostril (wider one) horizontally until it reaches the posterior pharyngeal wall. Patient is asked to swallow if needed with the help of cup of water. Tube passes through the relaxed cricopharyngeus and then into oesophagus. Afterwards it is easier to pass into the oesophagus. Once it is in the oesophagus adequately tube is fixed to nostril.

Confirmation of the tube in the stomach is done by aspirating the bile and also by injecting 30 ml of air into the stomach through the tube which can be heard in the epigastrium with a stethoscope as a gurgling sound.

Tube can be used for continuous drainage or drainage hourly or at regular intervals.

Problems with Ryle's Tube

- Discomfort to the patient.
- Blockage.
- Coiling in the mouth.
- Displacement.

SCESS DRAINAGE

ss is a localised collection of pus lined anulation tissue covered by pyogenic brane. It contains pus in loculi.

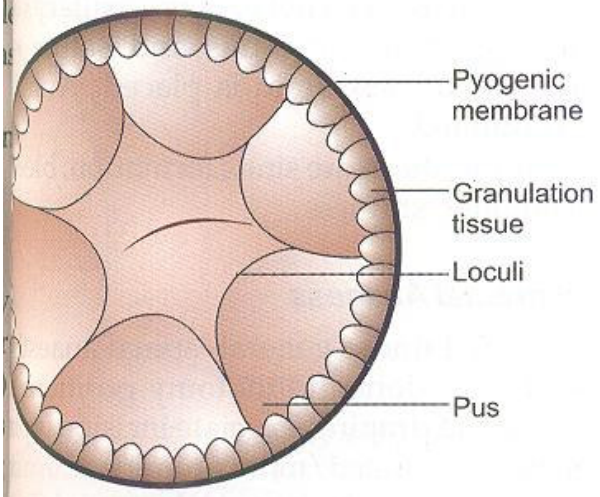

Fig. 7.6: Pyogenic abscess—Parts.

eria Causing Abscess

Staphylococcus aureus.
Streptococcus pyogenes.
Gram-negative bacteria (*E. coli, Pseudomonas, Klebsiella*).
Anaerobes.

tors Precipitating Abscess Formation

General condition of the patient: Nutrition, anaemia, age of the patient.
Associated diseases: Diabetes, HIV, immunosuppression.
Type and virulence of the organisms.
Trauma, haematoma, road traffic accidents.
Abscess should be drained only once it is formed er the cover of antibiotics.

atures of formed abscess are
Pointing tenderness
Visible pus
Excruciating pain
Localized swelling
Induration (browny induration)

scess is Drained by Hilton's Method

der general or regional anaesthesia, after aning and draping, using needle with syringe pus is aspirated and confirmed. Adequate incision is made over the skin in longitudinal to neurovascular bundle. Pyogenic membrane is opened using sinus forceps. Pus is collected for culture and sensitivity. All loculi should be broken. Wound is washed with saline. Gauze drain or corrugated drain is placed in the wound. Antibiotics are continued. Wound is allowed to granulate and heal.

Local anaesthesia may not act as pus is acidic in nature and xylocaine will not be effective in this acidic media.

Complications

- Improper drainage and residual abscess.
- Septicaemia.
- Sinus formation.
- If abscess is near the major vessels, sloughing of the wall of the vessel and torrential haemorrhage can occur occasionally.
  - Sarcoma and aneurysms may mimic pyogenic abscess especially when it is deep seated and so necessary investigations like CT scam and aspiration of the content should be done before incision and drainage.

Abscess in Special Locations

Abscess in special locations may not show features of formed abscess. In those locations abscess should be drained without waiting for features of formed abscess- pointing, fluctuation. They are–

- Parotid abscess.
- Breast abscess.
- Ludwig's angina—It is actually a cellulitis not an abscess but needs exploration and decompression.
- Thigh abscess.
- Ischiorectal abscess.

Parotid Abscess

Parotid abscess presents as severe pain and tender swelling in the parotid region in front of the tragus. Often patient will be toxic, dehydrated with trismus. Parotid abscess is drained