Surgical Operating Department
Part 2

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Content Part 2

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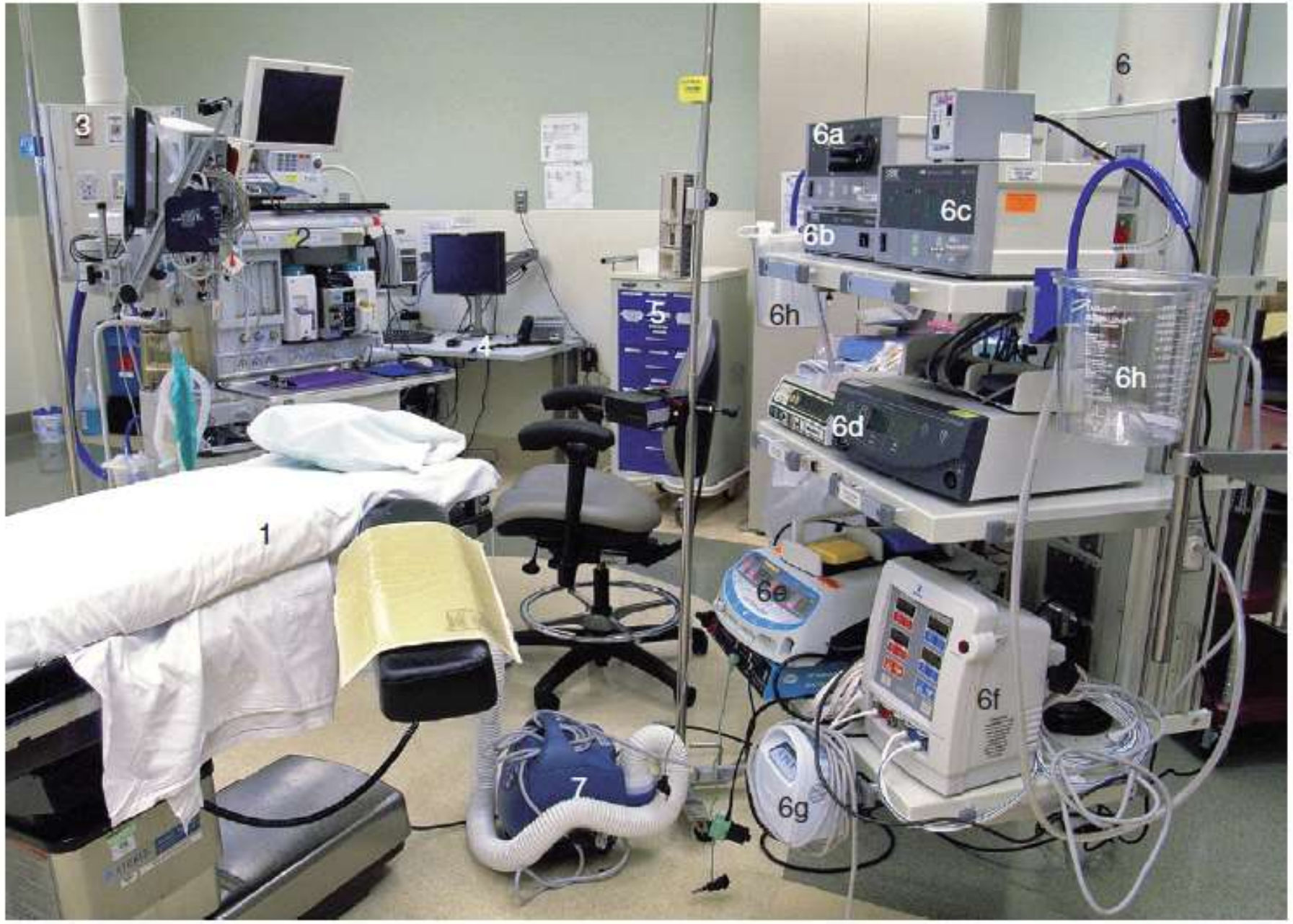
Modern Operating Room Practices

OR Environment

- The operating theatre is a complex place.
  - There are many potential factors which can interfere with surgery and predispose to errors.
  - Optimizing the operating theatre environment can enhance surgeon performance, which can ultimately improve patient outcomes.
  - These factors include
    - ❖ the physical environment (such as noise and light),
    - ❖ human factors (such as ergonomics), and
    - ❖ surgeon-related factors (such as fatigue and stress).
  - As individual factors, they may not affect surgical outcome but in combination, they may exert a significant influence.



Operating Room Suite/Basic Laparotomy

1, OR table;
2, anesthesia machine;
3, anesthesia boom;
4, physician resource station/desk (i.e., EMR, x-rays);
5, anesthesia support cart;
6, OR boom;
- *6a,* light source;
- *6b,* camera;
- *6c,* insufflator and insufflation warmer;
- *6d,* service-specific equipment (i.e., ArthroCare);
- *6e,* electrical surgical unit;
- *6f,* tourniquet;
- *6g,* surgical compression device;
- *6h,* suction;

7, patient airflow warmer.

Tighe SM. Instrumentation for the operating room, 8th Ed. Elsevier, St Louis, Missouri

Patient journey through the OR

- Patient safety is paramount in this complex environment
- Guidelines have evolved to manage the complex OR environment
- This needs to be followed meticulously

- Patient journey through the operating department. For an elective surgery the patient journey is typically as under: (13)
  1. GP referral:
     - ❖ refers to hospital or to a surgeon
  2. Outpatient clinic:
     - ❖ Patient sees a consulting surgeon – history is obtained, physical examination is done
     - ❖ Tests ordered
     - ❖ Patient reviewed by the surgeon along with the results/report of the tests
     - ❖ Surgery advised

Patient journey

- ❖Risks and benefits discussed with the patient
- ❖Date of surgery finalised

3. Pre-assessment clinic:
   - ❖Patient attend the clinic to assess his/her fitness for surgery
   - ❖The clinic is conducted by an anaesthetist
   - ❖Further tests may be requested and patient reviewed with the test results
   - ❖Tentative anaesthesia plan is drawn up
4. Patient may be advised to get admitted a day prior to the appointed date of surgery
   - ❖Sometimes the patient is admitted in the morning of the appointed date as per the surgeons advise
     - ➢ In that case fasting and otherrequirements is briefed to the patient

Patient journey

5. In the ward:

- If admitted prior evening, preoperative preparation is carried out in the ward including fasting
- Usually, a member of the surgical team visits the patient in the ward on the morning of surgery to check that there is no gross change in patient's condition. Also provides psychological support
- The ward protocol is followed
- OT nurse calls for the patient and patient is taken to the OT by a nurse at the appointed time along with all medical documents and imaging films and laboratory test reports
- Patient is handed over to the preoperative area nurse along with all documents
- Handing taking over of the patient is done as per a laid down protocol. This includes patient identification and preoperative medication and patient consent for the surgery

Patient journey

- ❖Patient is taken to the OR when the OR is ready

6. In the OR

- ❖Anaesthetist performs an anaesthetic check and ensures that the anaesthesia plan drawn up earlier is OK or makes changes if required
- ❖Surgical time out is performed and documented
- ❖Patient is positioned on the OT table
- ❖Usually, in India, patient is inducted on the OT table itself
- ❖Patient is draped
- ❖Preoperative antibiotic as per the hospital protocol is administered
- ❖Site of operation prepared

Patient journey

- OR procedure performed
- Dressing is done
- Phase one recovery is done
- Patient is wheeled out to post operative recovery unit/ICU
- After recovery patient is taken to ward or ICU as required

Perioperative Care of the Patient

- Psychological support of the patient in surgery (14)
  - Whenever a surgery is recommended irrespective of whether it is a minor or a major procedure, the patient is apprehensive and needs psychological support
  - It begins with referring physician who refers the patient to a surgeon
  - Surgeon while discussing with the patient , in a supportive manner, outlines a favourable course of events
    - ❖But the surgeon will not guarantee the outcome of the surgical procedure
    - ❖Surgeon must also inform the patient about the possibility of poor results and potential complications or injuries related to the procedure
  - Thereafter, the surgeon patiently answers all queries of the patient till the patient is satisfied

Perioperative Care of the Patient

- The surgeon comforts the patient that the hospital is an accredited facility
- If there are alternative treatment or therapies, that must be disclosed before the patient is asked to sign the “informed consent”
- Following admission to a ward, if time permits, the patient may be offered a perioperative training session and / or a teaching video.
- Whenever possible the patient should be provided with opportunity to express anxiety and answer questions
- The nurse preparing the patient for surgery, completes the surgical checklist
- Before the patient is taken to the OR, two sources of identification must be used to confirm identity of the patient
- Staff also must check in the medical document a list of allergies

Perioperative Care of the Patient

- The Circulator
  - When the patient arrives in the OR preoperative holding area, the circulator will implement a universal protocol to
    - ❖ Identify by asking the patient to state his/her name and by using another identifier
    - ❖ The identifier includes:
      - ➢ Ask the patient to state his/her name
      - ➢ Compare the name on the chart to the patient's stated name
      - ➢ Compare the name on the patient's armband to the name on the chart
  - The patient's name, date of birth, the name of the admitting doctor or surgeon, and other identifiers on the patient's hospital armband must match those identifiers on the chart.
  - The patient is asked to state the proposed procedure;
    - ❖ the perioperative practitioner records the patient's response in the patient's *own* words on the record.

Perioperative Care of the Patient

- In the surgical suite, the circulator again asks the patient to state his/her name.
  - (Note that the patient's name and identifiers are verified a number of times by different personnel.)
- The circulator compares with the patient or his/her representative and noted in the chart.
  - The patient's name and identification number with the armband, chart,
  - the procedure to be performed,
  - The appropriately marked site/side (or laterality) of the body as applicable, and
    - The name of the surgeon are reconfirmed with the patient or the patient's representative.
  - The patient's fasting status,
  - Prosthetic devices,

Perioperative Care of the Patient

- Special physical needs, and drug and substance intolerances, including sensitivities and ALLERGIES, are reviewed by the circulator
- Documentation of this information is valuable
  - ❖This provides another layer for preventing errors in patient care;
  - ❖It provides an extra measure of patient safety.
- Verification of medical record for currency of information
  - ❖Laboratory data are reviewed, current record of patient's history and findings of physical examination is done
  - ❖Any discrepancy or deviation from norms, if found is reported to the anaesthetist and the surgeon immediately
  - ❖In Indian condition these are done by the anaesthetist himself/herself and not by the circulator

Perioperative Care of the Patient

- Making the patient comfortable and securing valuables
  - OR temperature particularly in some ORs, such as joint replacement OR, is much lower
  - The circulator offers a warm blanket to the patient on entry to the OR
  - The circulator touches the patient's hand or shoulder
    - This is to show concern for the patient
  - Any valuables or personal property items not previously collected and secured and their destination is noted on the chart
  - The patient may still have some questions
    - The circulator answers them or directs them to the surgeon as appropriate
    - The mannerism of answering them with empathy comforts the patient and make the patient feel secure
    - Further feeling of security may be added when the circulator informs the patient that she/he is the patient's advocate and shall act on patient's behalf (15)
    - This significantly adds to patient comfort and the feeling of security
    - (No formal programme is available in India, but functions are incorporated in nursing care functions)

Perioperative Care of the Patient

- The chart is checked once again by the circulator for authorisation for surgery and consent to surgery
- Every hospital devices their own form of obtaining informed consent from the patient
- This is a legal requirement

- Surgical Safety Checklist - Sign out procedure
  - The detailed sign out procedure has been laid down by the WHO (16)
    - This is a brief, less than one minute pause in operating-room activity immediately before incision, at which time all members of the operating team—surgeons, anaesthetists, nurses and anyone else involved:
      - verbally confirm the identity of the patient,
      - the operative site and
      - the procedure to be performed.
    - It is a means of ensuring clear communication among team members and avoiding ‘wrong-site’ or ‘wrong-patient’ errors

Perioperative Care of the Patient

- Any special equipment, instrumentation, and/or implant must be available in the OR, ready for use prior to starting the surgery
- The circulator should also ensure that
  - If blood and blood product have been ordered, their availability should be determined prior to surgery
- For preventing wastage of blood in elective surgery the practice of “Maximum Surgical Blood Ordering Schedule” (MSBOS) should be followed
  - Most often blood is indented more than what ultimately is required for transfusion
  - This practice needs review and will reduce wastage of blood, and
  - Also will reduce the time and effort spent at he blood bank for cross matching
  - Any blood bag taken out for crosshatching is held in reserve and is not available for other patients
  - This causes loss of shelf life and wastage when not transfused to the patient

Perioperative Care of the Patient

- Thus every requirement for the surgery should be reviewed during the time out procedure
- Surgery should not start till all discrepancies have been sorted out
- All pertinent issues and events must be documented in the preoperative record
- It also has legal implications
  - ❖Any incident that arises during surgery and not documented shall not be accepted in a court of law as facts
- It may be remembered that the patient may be able to perceive, in varying degree, what is said during the induction of general anaesthesia,
- This can even happen subsequently as hearing is the last sense to be lost

Perioperative Care of the Patient

- It is important that everybody present in the OR must maintain silence during induction of anaesthesia
  - ❖ Otherwise also, talking should be kept to a minimum during the entire surgery to avoid distraction
  - ❖ Number of people permitted in the OR should be those who are needed during the surgery
- During induction, the circulator should hold the patient's hand and/or make eye contact until the patient is anaesthetised.
  - ❖ The process should be continued intermittently when the patient experiences varying degree of awareness
    - ➢ This happens, e.g., when sedation and analgesia/conscious sedation are employed
- Post operatively, the anaesthesia provider and the circulator safely transport the patient to the Post Anaesthesia Care Unit (PACU)

Perioperative Care of the Patient

- The circulator hands over the patient to the PACU nurse
  - A checklist for the handoff may be locally prepared for this purposes
  - Should include:
    - Patients present condition
    - Surgery details, and
    - Patient's immediate need

Patient Safety in Surgery

- Protection of the Patient in Surgery
  - Many adverse events can occur in the complex environment of an operating room
  - Many safety protocols have been designed to protect the patient in surgery
  - Some salient features are given subsequently
  - Patient identification
    - ❖ Procedures have been performed on wrong patient , wrong site and wrong procedure
      - ➢ These were due to failure to identify the patient correctly
    - ❖ The Joint Commission mandated that at least two identifiers must be iused to identify a patient
    - ❖ The identification procedure is repeated several times during the preoperative periodvas the patient moves from the ward to the operating table

Patient Safety in Surgery

- The identifiers could be
  - Asking the patient to state his/her name and tallying that with the wrist band and the Medical record
  - Patient should never be asked are you *such and such*?
  - The second identifier could be patient's date of birth
  - Other questions that should be asked to the patient are:
    - The surgeon's name
    - The procedure to be performed
    - The side or laterality
    - The site should be marked in the ward
    - The site/side should be stated on the consent form
  - All answers should be compared with that of the medical record
  - Again before incision is given, the time out procedure (WHO) should be performed and any discrepancy noted by any one present to the surgeon

Patient Safety in Surgery

- Authorisation for and Consent to Surgery
  - In all elective procedures, a consent to surgery is mandatory
  - This consent is to be obtained after informing the patient about
    - All aspects of the disease,
      - Drawing up a sketch to explain the disease and the procedure is desirable
    - The necessity for the surgery,
    - The benefits and risks are stated in clear terms without scaring the patient
    - The consequences, if surgery is not performed,
    - Any complications or adverse event that can occur, and
    - Whether any alternative form of treatment is available
    - It is preferable to obtain consent when the patient is not under duress or feels rushed
      - Preferred timing may be when the patient attends the clinic

Patient Safety in Surgery

- The operating surgeon or any member of the surgeon's team should answer all queries of the patient,
  - The team member who is capable of performing the procedure and is trained can interact with the patient for obtaining the consent
  - When the patient is fully satisfied only then the patient should be asked to sign the consent form
- The patient, if above the age of 18 years of age and is competent can give consent
  - Else a legal guardian of the patient should give the consent
- The surgical procedure can be performed to the extent the consent is given
  - E.g., if the consent is for cholecystectomy, the appendix cannot be removed

Patient Safety in Surgery

- Other requirements
  - These may include:
    - ❖ Recent history and physical examination report
    - ❖ Haematology and blood chemistry reports
    - ❖ Urinalysis report
    - ❖ Chest x-ray
    - ❖ ECG
    - ❖ And other reports depending on
      - ➢ patient's age, diagnosis, and medical condition, and
      - ➢ Hospital policy

Transferring patient to the operating table

- Transportation of Patient
  - Unless done properly, the patient can be injured and harmed during transportation of the patient from
    - ❖bed to a transportation device -
    - ❖transporting the patient to the perioperative holding area –
    - ❖transfer a patient from a transportation device to an operating room table
  - It is the responsibility of Health Care Workers (HCW) for safe care of transporting patients to the operating room and recognising the possible hazards
    - ❖This is to be done as per the recommended practices in order to prevent injuries to the patient and surgery department personnel

Transferring patient to the operating table

- The recommended practices aid in:
  - ❖ Ensuring the transfer and transportation of the patient without tissue injury
  - ❖ Avoiding undue physical or emotional discomfort, and
  - ❖ Avoiding severe alterations in body temperature, respirations, and cardiovascular reactions including hypotension and tissue perfusion
- The Association of Surgical Technologists, USA has published a document of Recommended Standards of Practice for Patient Transportation (17)
- In this document there are three standard of practice for safe transportation of patient in perioperative setting. These are:
  - ❖ Standard of Practice I
    - ➢ *"It is the responsibility of the HCWs to ensure the safe patient transfer of a patient from a bed to a transportation device"*

Transferring patient to the operating table

- Standard of Practice II
  - *"It is the responsibility of the HCWs to safely transport a patient to the perioperative holding area or operating room"*
- Standard of Practice III
  - It is the responsibility of the Certified Surgical Technologist (CST), Certified Surgical First Assistant (CSFA) and circulator to safely transfer a patient from a transportation device to an operating room
  - To ensure the safety of the patient and surgical team members, the following safety measures should be implemented during the transfer of the patient:
    1. When using a stretcher, it should always be positioned by comparing the patient's body length to the OR table
    2. The wheels of the transportation device should be locked
    3. Confirm the wheels of the OR table are locked

Transferring patient to the operating table

4. IV lines, indwelling catheter, monitoring system lines and drains are secure and not entangled to prevent dislodging
5. The correct number of surgical team members should be used for the transfer of the patient
   - For the conscious mobile patient, a minimum of two team members is necessary .
   - For a nonmobile, conscious or unconscious patient, a minimum of four team members is necessary to avoid personnel and patient injuries
6. For the nonmobile patient, a patient transfer device, such as roller should be used
7. The anaesthesia provider should indicate when the patient can move himself/herself over the OR table, or
   - For the nonmobile patient the anaesthesia provider should verbally indicate to the team members when the patient can be moved.
   - The anaesthesia provider should be responsible for protecting the head and neck and airway of the patient during the transfer

Transferring patient to the operating table

8. Use smooth, even movement when transferring the nonmobile patient to avoid injury
   - Do not drag the patient on to the OR table from the transportation device
   - Dragging or bouncing the patient can provoke decompensated perfusion and cause physical injury to the patient
9. Centre the patient on the OR table and place the safety strap across the thighs approximately two inches above the knee joints.
   - Place two fingers under the safety strap to ensure it is not too tight
10. Confirm bony areas of patient's body are well padded and not resting on any metal portion of the OR table

- Preventing Patient Falls
  - Though uncommon, when patient falls from O.R., or procedure table during anaesthesia, it is a clear violation of professional duty
  - Constant vigilance and mid-thigh strapping are the important measure to prevent falls
  - Patient should never be left unattended

Transferring patient to the operating table

- The following patient care concept should be implemented during the transfer of the patient
  - ❖ Maintain the dignity of the patient throughout the transfer process by keeping him/her covered with a sheet
  - ❖ Explain all actions to the conscious patient about what is occurring in preparation for the transfer
  - ❖ Instruct the patient not to move until given the command to do so
  - ❖ Indicate which team member will indicate to the patient that he/she can move to OR table

Positioning/Surgical positions

- Positioning
  - The surgeon determines the position of the patient depending on
    - the surgical approach for the procedure
    - The physical condition of the patient, and
    - Surgeons' preference in consultation with the anaesthetist
  - The Patient characteristics that need to be taken into consideration are:
    - Height
    - Weight
    - Body habitus
    - Age
    - Coexisting disease limitations, and
    - Cardiopulmonary status

Positioning/Surgical positions

- The desired patient outcome of patient positioning at the conclusion of surgery is the avoidance of injuries to:
  - Skin
  - Nerves
  - Blood vessels
  - Musculoskeletal
- After the anaesthetist takes over the patient care, the patient never be moved without the anaesthetist's permission and direction
- In all instances, proper body alignment is to be maintained
  - Adequate assistance should be obtained prior to moving or lifting the patient
  - Positioning aids if used must be brought to the OR prior to the patient coming to the OR to avoid delaying the anaesthesia and surgical time

Positioning/Surgical positions

- When the patient is moved, the surgeon protects the patient areas involved with fracture, severe injuries, significant deformities, or applied devices
- The final position of the patient may begin with a basic position
  - ❖ This position is appropriately modified to ensure patient safety and to obtain best exposure of surgical site
  - ❖ The patient's physical mobility is assessed to prevent pain and injury by avoiding excessive flexion or extension of joints
    - ➢ This is more important in case of arthritis, paralysis, or other pre-existing physical conditions
  - ❖ It may be remembered that an anaesthetised patient cannot complain of pain
- An oscillating air mattress may be placed on the table for selected patients (with fragile skin)
  - ❖ This is to protect the skin integrity from injury caused by pressure ischaemia

Positioning/Surgical positions

- The patient's body should not hang over the table in any direction
  - If necessary, a padded extension can be added to the table
- Preventing electricity grounding
  - The skin must not be in contact with any metal surface
    - The reason is that through the exposed area the electricity will be grounded causing burns during electrosurgery
    - When using unipolar electrosurgery, the pencil must be replaced in the holster when not in use
- Protecting pressure points
  - The bony areas of the patient should be protected by using packing, pillows, donuts, towels or blanket rolls, etc.
  - In prone position, genitals and breasts should be protected by placing extra padding

Positioning/Surgical positions

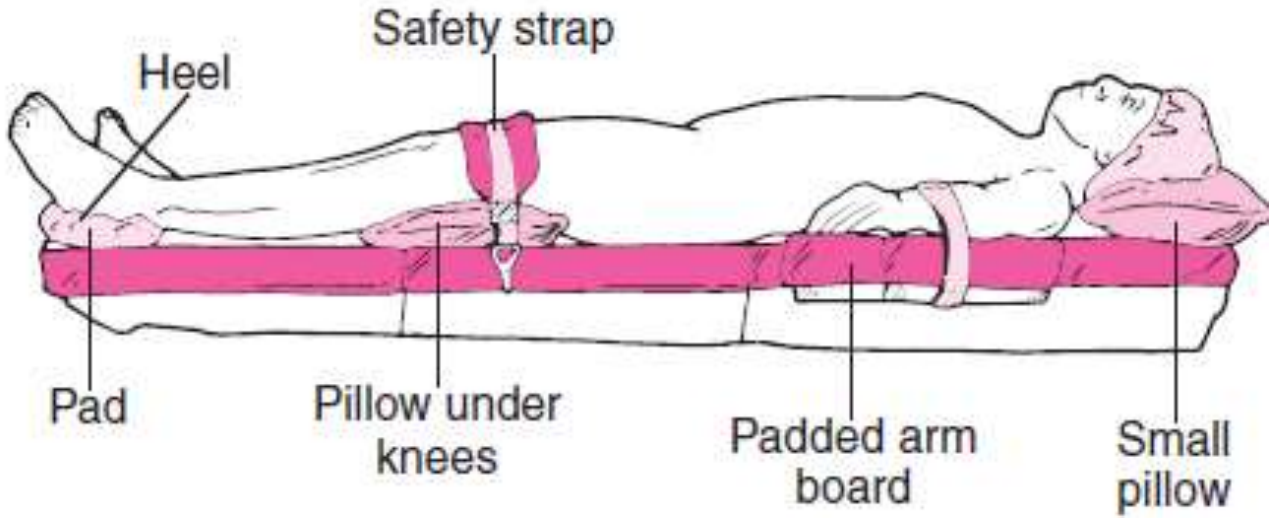
- Pressure points (contd.)
  - Blanket rolls are utilised under the chest to facilitate adequate lung expansion when the patient is prone
  - Strain on back muscles need to be avoided
    - ❖ A pillow under the knee, for example, can reduce this back strain
  - Hyper extension injuries can be prevented with proper support of arms, hands, fingers neck, and lower extremities
  - The positioning and avoiding injuries to patient is to be done by the circulator and should be overseen by the anaesthetist
  - The circulator along with the scrub nurse should ascertain that neither the Mayo stand or any drape sheets are causing pressure on the common peroneal nerve.
  - This may result in foot drop

Positioning/Surgical positions

- Surgical table accessories
  - There are various operating table accessories used in surgery for protecting patients during surgery.
  - These are grouped as (Items manufactured by one manufacturer (18)):
    - Arm supports
    - Body restraints
    - Clamps and sockets
    - Disposable surgical accessories
    - Head rests
    - Leg supports
    - Pad positioners
    - Pressure management

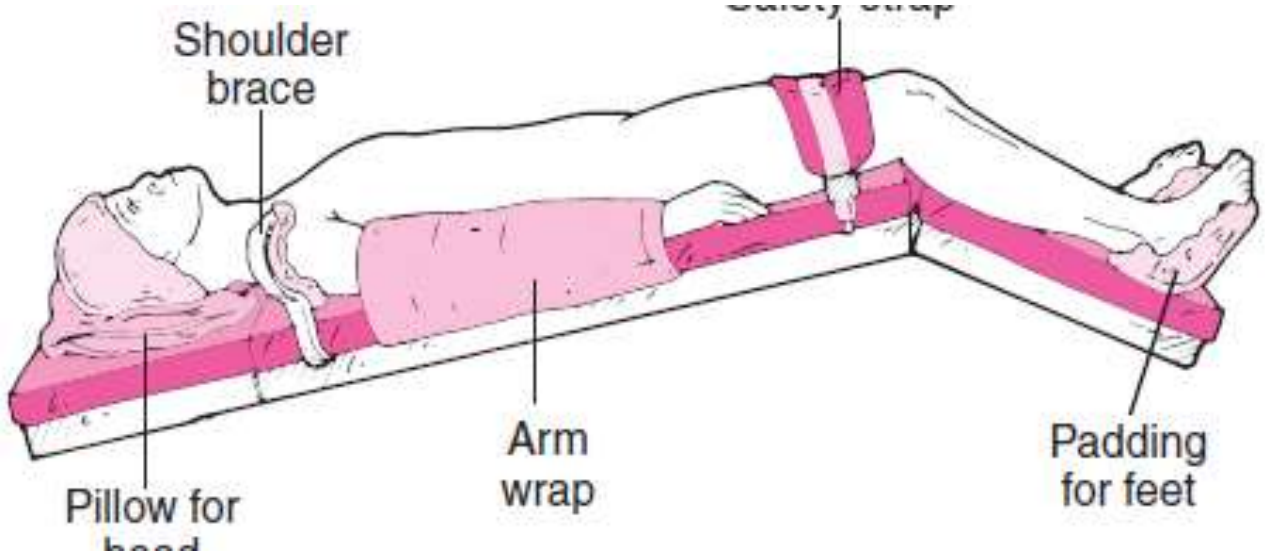
Positioning/Surgical positions

- Common positions employed in surgery
  1. Supine/Dorsal Recumbent
     - ❖This is the most frequently used position in surgery
     - ❖It may be employed for procedures on the face (the head may be stabilised on a donut, the neck with small pillow under the neck to provide increased extension), the abdomen, the upper extremities, and the lower extremity



Positioning/Surgical positions

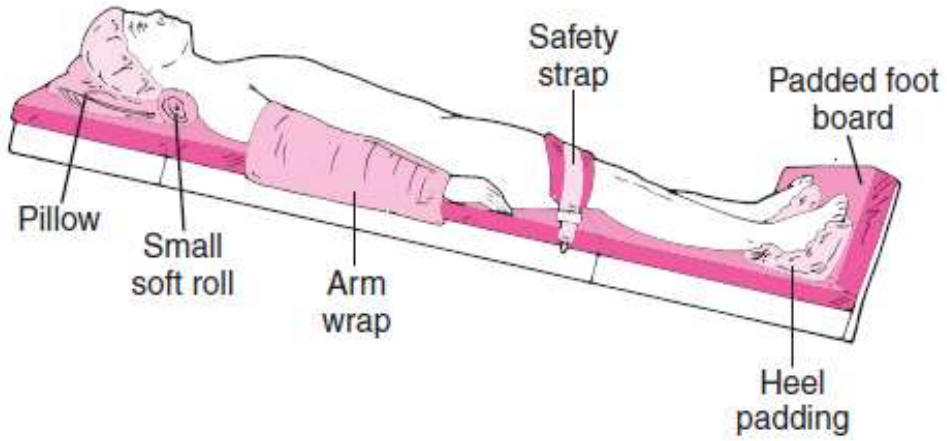
2. Trendelenburg
   - ❖This position is a variation of supine position
   - ❖The head of the torso is tilted downward (to 30^0 to 45^0 angle)
   - ❖This allows abdominal content towards the head – allowing better visualisation of pelvic contents during surgery
   - ❖This position should not be maintained longer than necessary



Positioning/Surgical positions

3. Reverse Trendelenburg

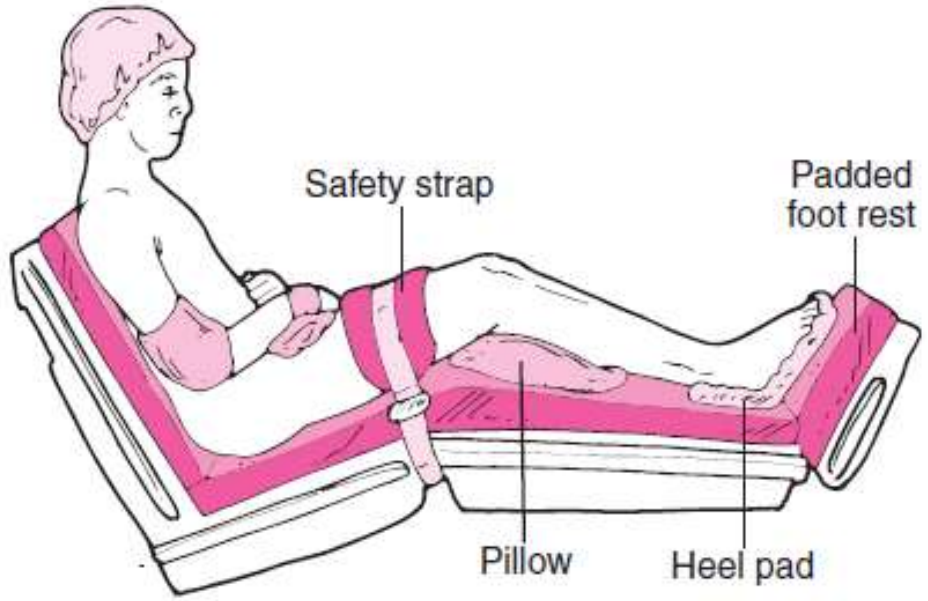
- ❖It is a variation of the supine position
- ❖The entire table is tilted upward so that the head is higher than the feet
- ❖A sequential compression device with antiembolic hose or leg wraps is recommended to avoid venous stasis
- ❖This position is employed in leg procedures as thyroidectomy and also for laparoscopic procedures as cholecystectomy



Positioning/Surgical positions

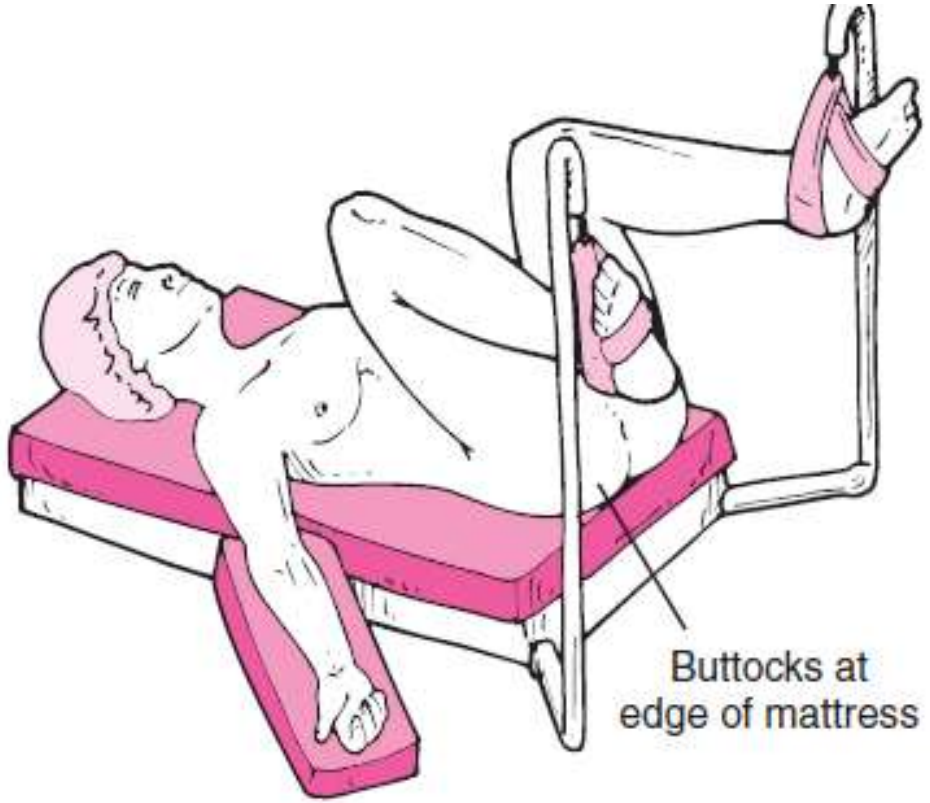
4. Fowler's/Sitting

- ❖It is also a modification of supine position; The patient appears to be sitting on a chair
- ❖The buttocks are positioned over the middle bend (kidney rest) at the table's edge and the knees are positioned over the lower break in the table
- ❖The head of the table is tilted upwards as much as a 90^0 angle; this position supports the head and torso
- ❖The position may be used for posterior crniotomy
- ❖There is a variation of this position known as semi-Fowler position



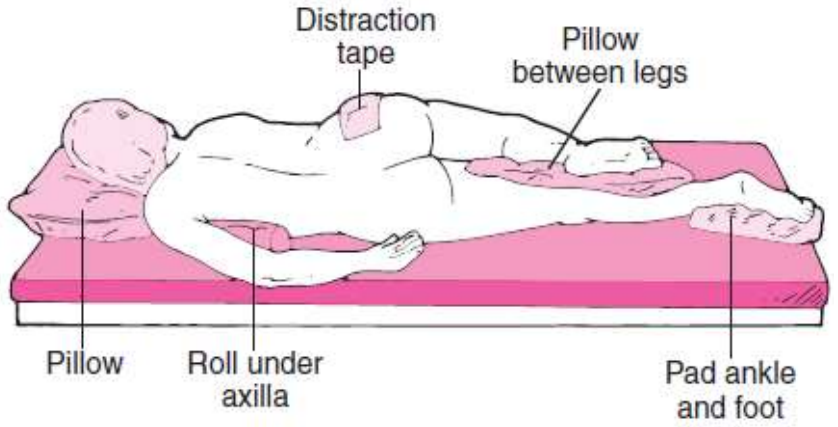
Positioning/Surgical positions

5. Dorsal lithotomy
   - ❖ This position is also a modification of the supine position
   - ❖ Stirrup or strap attachments, adjusted to equal heights are secured on the table at the middle break
   - ❖ After the feet are secured in stirrups, the lower mattress section is removed and the foot of the table is lowered completely
   - ❖ This position is used for obstetrics, gynaecology, perineal, anorectal and urologic procedures
   - ○ The term lithotomy originally referred to the extraction of bladder stones transperitoneally



Positioning/Surgical positions

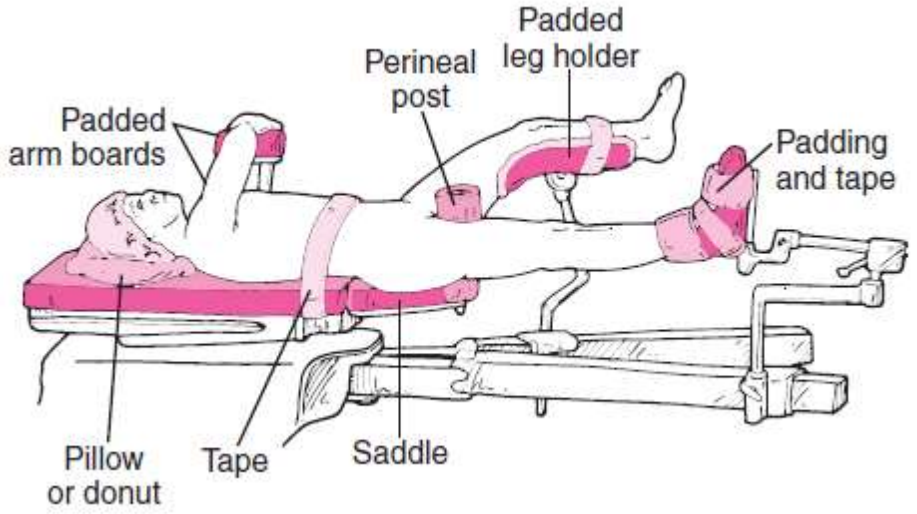
6. Sims' (Semi-Prone)
   - ❖ In this position, the patient is placed on his/her left side with the left thigh and leg extended, patient is usually awake
   - ❖ The right knee and hip are flexed and supported by a padded table restraint with a pillow placed between the legs to prevent undue pressure
   - ❖ The patient's body is rotated to lie more supine than prone
   - ❖ The left arm is protected and secured at the patient's side and right arm is supported by a pillow padded Mayo stand, is placed over the patient's body
   - ❖ This position is employed for accessing vagina, anorectum, and perinium



Positioning/Surgical positions

7. Fracture Table

- Some patients arriving in OR in discomfort and in a traction device, first anaesthetised in hospital bed in which he/she arrives
- The surgeon with adequate assistance protectively transfers the patient to the table
- The patient is placed supine with both arms extended on padded armboards, arm on the affected side is placed on the chest flexed, supported by a pillow padded Mayo stand and secured with tape or double arm band
- The sacral area and genitalia are well padded and supported by a specially designed saddle
- The lower extremities are secured in padded stirrups or padded leg supports
- Orthopaedic procedures on lower extremities are performed
- Most often this position is employed for insertion of a hip prosthesis and total hip replacement



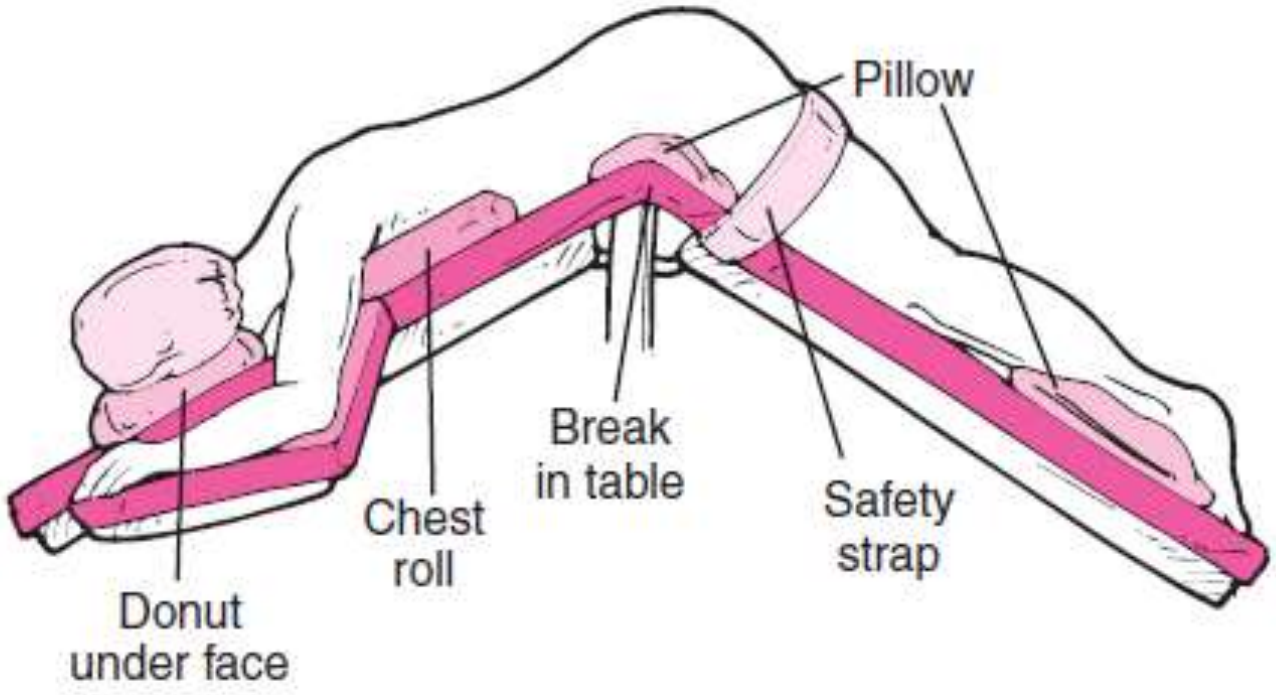
Positioning/Surgical positions

8. Prone

- ❖The patient is placed face down in the prone position depending on anaesthetics used
- ❖The head is turned to one side with face and ear protected by a donut or pillow
- ❖The hips are protected over the middle table break to permit flexion
- ❖The patient can be given caudal or hypobaric spinal anaesthesia without turning the patient. For General anaesthesia the patient is supine
- ❖Following induction, the airway or the endotracheal tube is secured with adhesive tape and the patient is turned over to prone position
- ❖Blanket role is placed bilaterally under the chest
- ❖Adrenalectomy or various spinal surgery is performed in prone position
- ❖Female breasts and male genitalia are well padded to prevent pressure injury

Prone position

- The arms may be tucked in at the sides or extended on padded arm boards
- If anorectal or sacrococcygeal surgery is performed, the buttocks are distracted with tape secured to the ipsilateral sides of the table
- Skin is protected with tincture benzoin
- A pillow may be placed under the pelvic region to elevate the buttocks and to prevent pressure on the pubis and genitalia

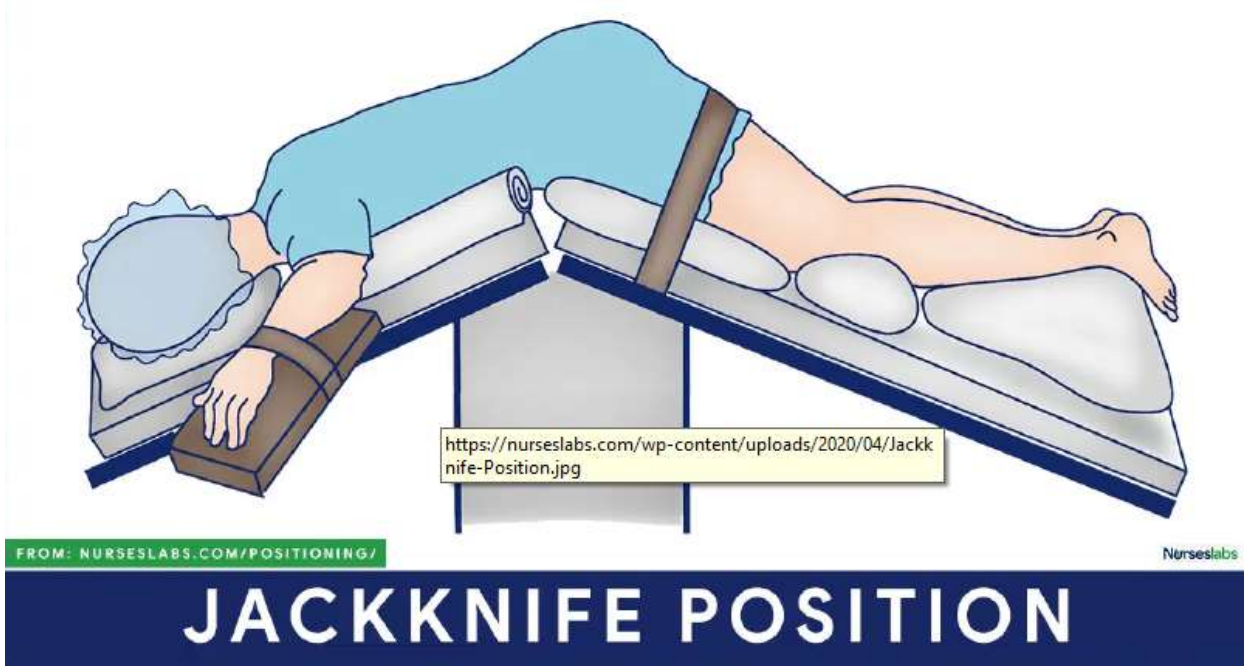


Positioning/Surgical positions

9. Jackknife position (19)
   - This position is also known as Karske position
   - Patient's abdomen lies flat on the bed
   - The bed is scissored so that the hip is lifted and the legs and head are low
   - This position is frequently used for surgeries involving the anus, rectum, coccyx, certain back surgeries and adrenal surgery
   - This type of positioning requires team effort
   - Cardiovascular effect of this position is compression of inferior vena cava from abdominal compression with decrease venous return to the heart.
   - This could increase the risk of deep vein thrombosis

Positioning/Surgical positions

- Jackknife (contd.)
  - Support padding : Many pillows are required on the operating table to support body and reduce pressure on the pelvis, back,, and the abdomen
  - Puts excessive pressure on knees
  - While positioning staff should put extra padding for the knee area



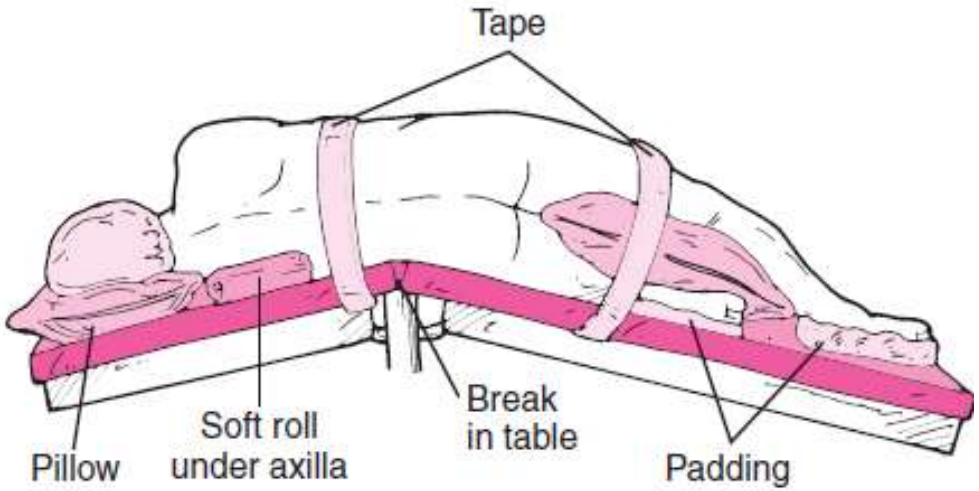
Positioning/Surgical positions

10. Lateral Kidney

- Patient is first anaesthetised, then placed in the lateral position
  - ❖ The affected side should be kept up
- The iliac crest is placed over the “kidney” elevator
- The head is placed on a padded donut, protecting the face and the ear on the unaffected side from undue pressure
- Bony prominences are well padded
- On the unaffected side, the lower extremity is flexed on the table and the leg on the affected side is extended straight over the leg below secured with wide adhesive tape to the underside of the table
- The feet and ankle are well padded, supported, and held in position secured by softly padded restraints or adhesive tape

Positioning/Surgical positions

- Kidney position (contd.)
  - Care is taken to avoid compromising circulation with all tape restraints
  - The arms may be placed on double arm boards or the dependent arm may be extended on a padded arm board with the upper arm
  - The head and neck are aligned without tension
  - Potential compromise of venous return from lower extremities may occur and pulmonary function on the dependent lung may be compromised, as well



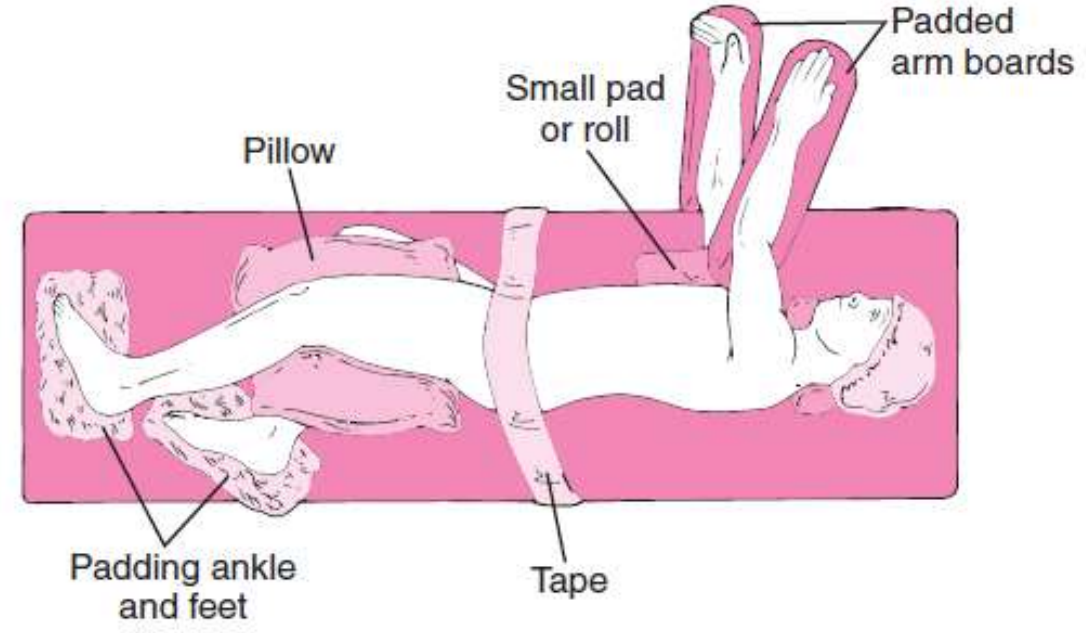
Positioning/Surgical positions

11. Lateral Chest / Posterolateral Thoracotomy

- After anaesthetising, the patient is placed on the unaffected side with the head on a padded donut
- The arm on the unaffected side is extended is extended on a padded arm board
  - Superior arm on the affected side is bent over the chest, supported by a pillow-padded Mayo stand, and secured
- The lower extremity on the unaffected side is flexed on the table
  - The extremity on the affected side is extended straight over the dependent leg
- A padded restraint is secured over the hips, or
  - The patient position may be secured by wide tape to the underside of the table

Positioning/Surgical positions

- ❖ A soft pad may be placed under the affected hip to prevent undue strain on the lumber region and to relieve pressure on the skin
- A modification of this is the anteriorchest position
  - ❖ The patient position is more supine than lateral
- This position is adopted for procedures requiring thoracoabdominal access
- The lateral chest position is employed for thoracotomy procedures



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End of Part 2