



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT OF CARDIOPULMONARY PERFUSION CARE
TECHNOLOGY

COURSE NAME: Introduction to Surgery

TOPIC : Incision and its types



SURGICAL INCISION



- Surgical Incision is a **cut made through the skin** to facilitate an operation or procedure.
- It should be the aim of the surgeon to employ the **type of incision** considered to be the most suitable for that particular operation to be performed.
- Often, multiple incisions are possible for an operation.
- In general, a surgical incision is made as small and unobtrusive as possible to facilitate safe and timely operating conditions.
- In doing so, three essentials should be achieved:
1.Accessibility 2.Extensibility 3.Security

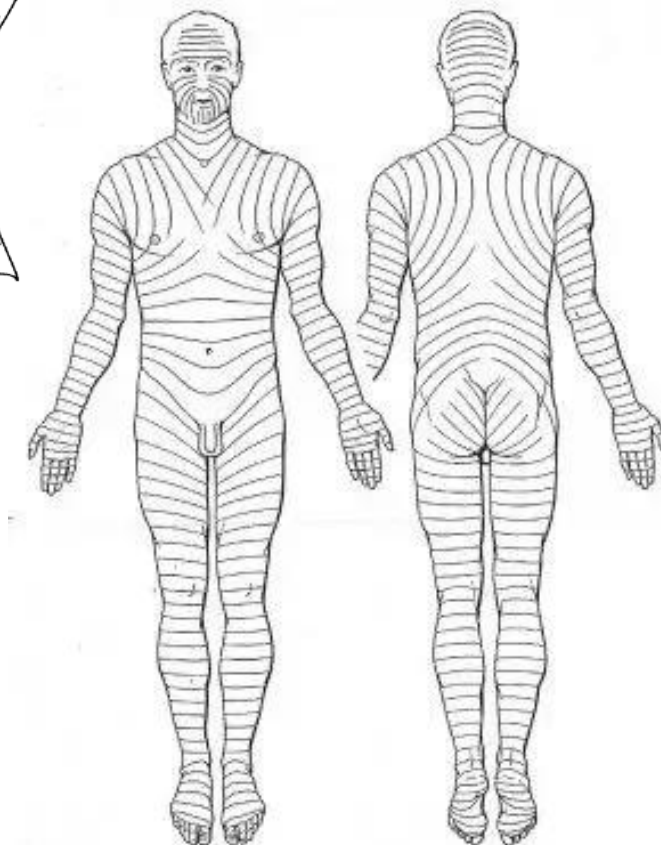




LANGER'S LINE

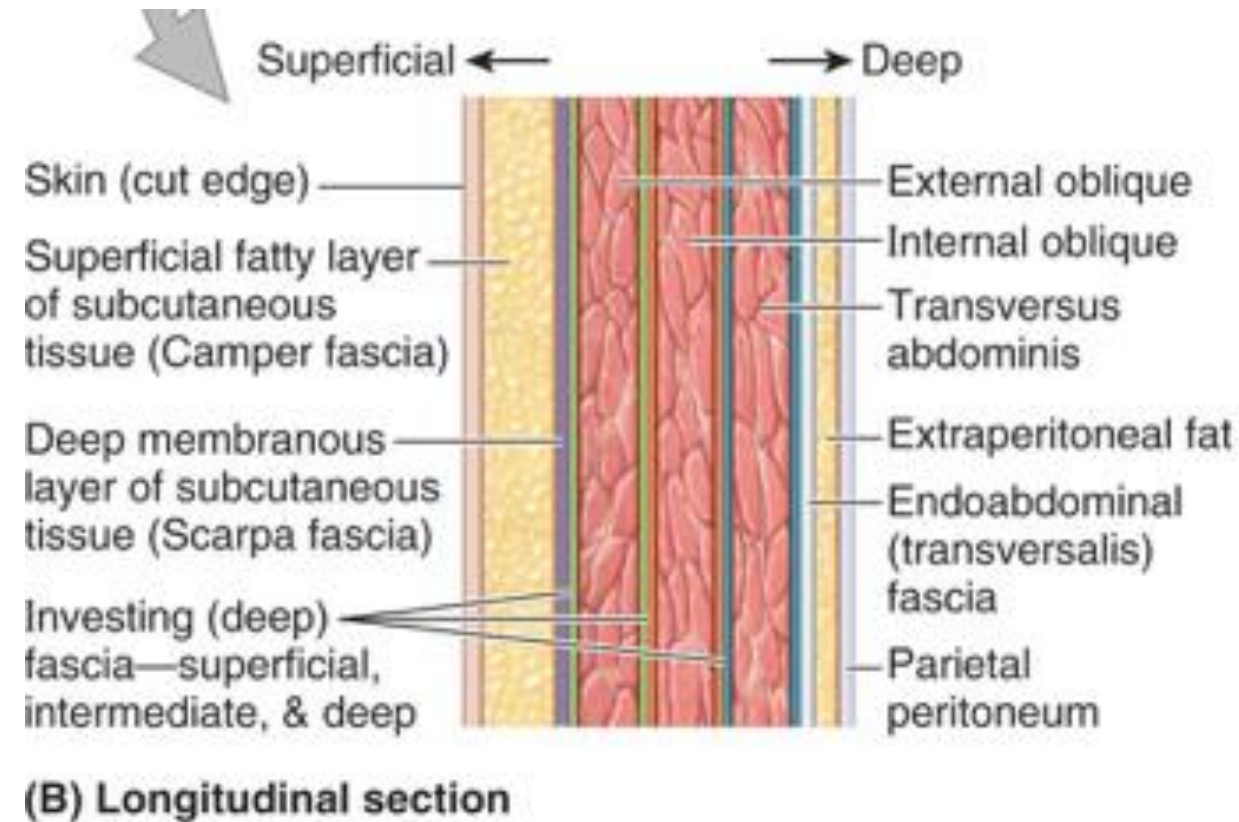


- **Langer's Line** correspond to the natural orientation of collagen fibers in the dermis, and are generally parallel to the orientation of the underlying muscle fibers
- These lines were originally determined in the 19th century by piercing cadaver skin and observing the **orientation of skin.**
- It is also called as **Skin tension lines or lines of cleavage**
- Incisions made parallel to Langer's lines may heal better and **produce less scarring** than those that cut across.



LAYERS OF ABDOMINAL WALL

- Skin
- Subcutaneous tissue
- Superficial Fascia
 - Camper's (Fascia-fatty superficial layer)
 - Scarpa's Fascia (deep fibrous layer)
- Deep Fascia (Gallaudet's Fascia)
- Musculoaponeurotic Layer (External Oblique Muscle, Internal Oblique Muscle, Transverse Abdominal Muscle, Rectus Abdominis, Pyramidalis Muscle)
- Fascia Transversalis
- Preperitoneal Fatty Tissue
- Peritoneum





TYPES OF INCISION

ABDOMINAL AND PELVIC INCISION

Vertical Incision



Midline
Paramidline

Transverse & Oblique Incision



Kocher Subcostal Incision
Transverse Muscle Dividing
McBurney Incision
Oblique Muscle Cutting
Pfannenstiel Incision
Maylard Incision

Abdominothoracic Incision



VERTICAL INCISION – MIDLINE

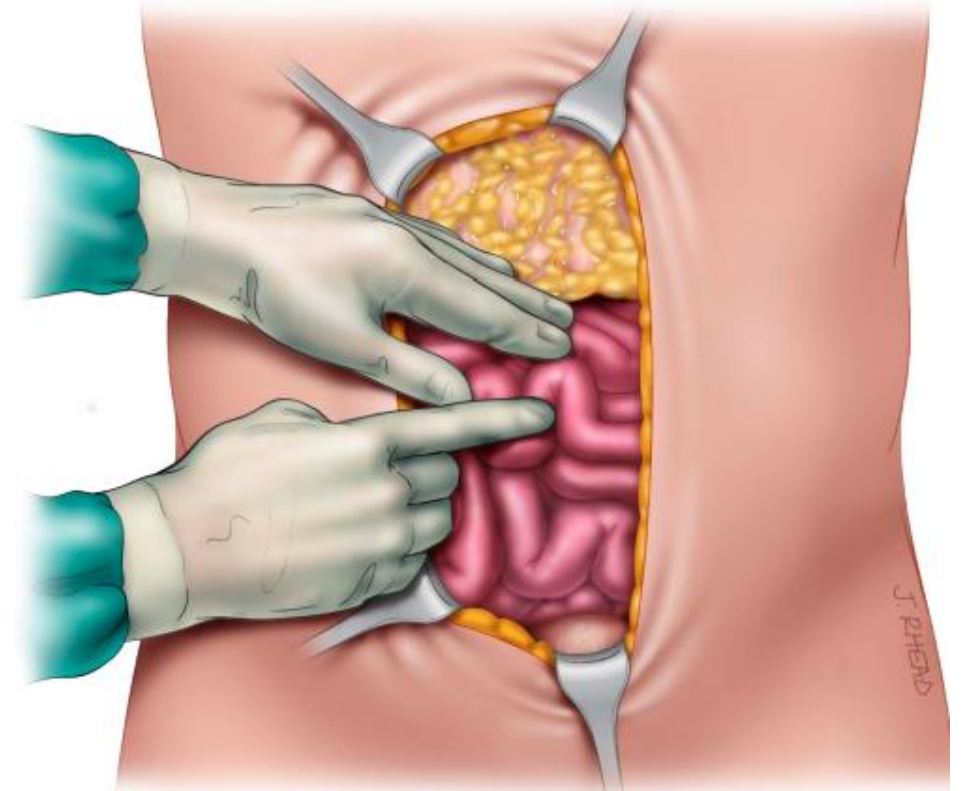


- Almost all operations in the abdomen and retroperitoneum

Midline Incision

Advantages:

- Almost bloodless -no muscle fibers are divided
- No nerves are injured
- Good access to upper abdominal viscera
- Very quick to make as well as to close
- Can be extended full length of abdomen curving around umbilical scar.



Laparotomy



VERTICAL INCISION – PARAMEDIAN INCISION



Paramedian Incisions – Placed 2 to 5 cm parallel to the midline

Has 2 theoretical advantages:

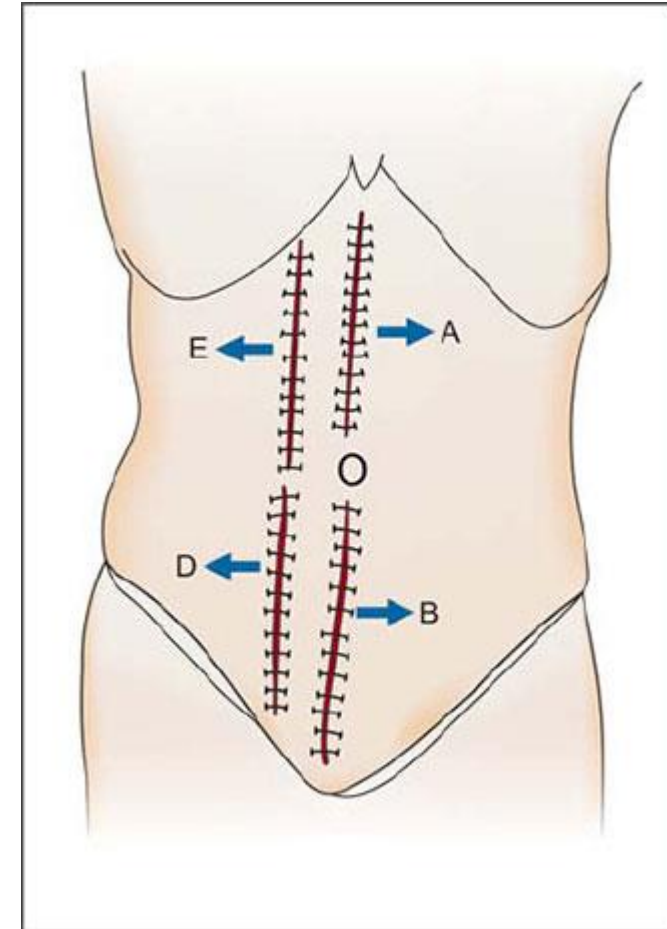
- It offsets vertical incision to right or left, providing access to lateral structures such as **spleen or kidney**.
- Closure is theoretically more secure because rectus muscle can act as a buttress between reapproximated posterior and anterior fascial planes
- Minimal risk of postoperative wound disruption



VERTICAL INCISION – PARAMEDIAN INCISION

Disadvantage of Paramedian Incision

- It tends to weaken and strip off the muscles from its lateral vascular and nerve supply resulting in atrophy of the muscle medial to the incision.
- The incision is laborious and difficult to extend superiorly as is limited by costal margins.
- It doesn't give good access to contralateral structures.
- Incision needs to be closed in layers

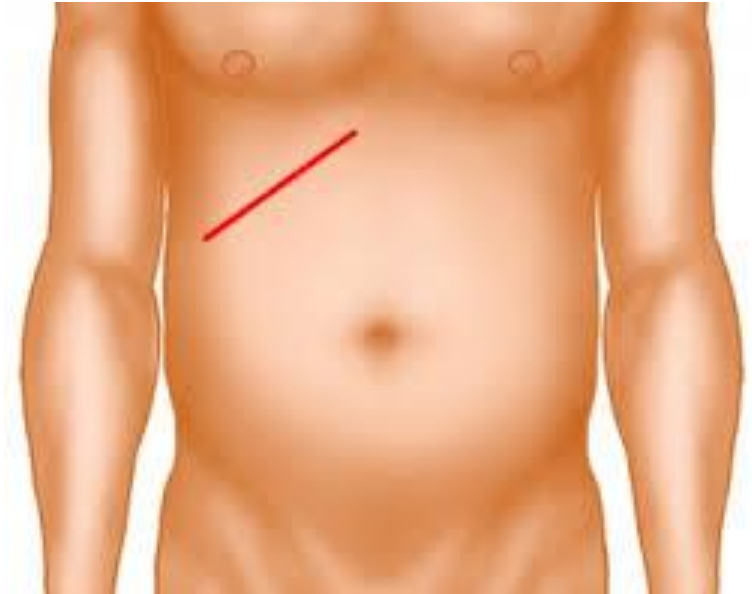




TRANSVERSE INCISIONS – KOCHER SUBCOSTAL INCISION



- The **Kocher incision** is a subcostal incision on the **right side** of the abdomen used for open **exposure of the gallbladder and biliary tree**.
- The skin incision starts in the midline **2.5–5 cm** below the **xiphoid**, and extends downwards and parallel and **2.5cm** below the **costal margin**
- Incision for biliary tract surgery especially for **cholecystectomy**





TYPES OF KOCHER'S INCISION

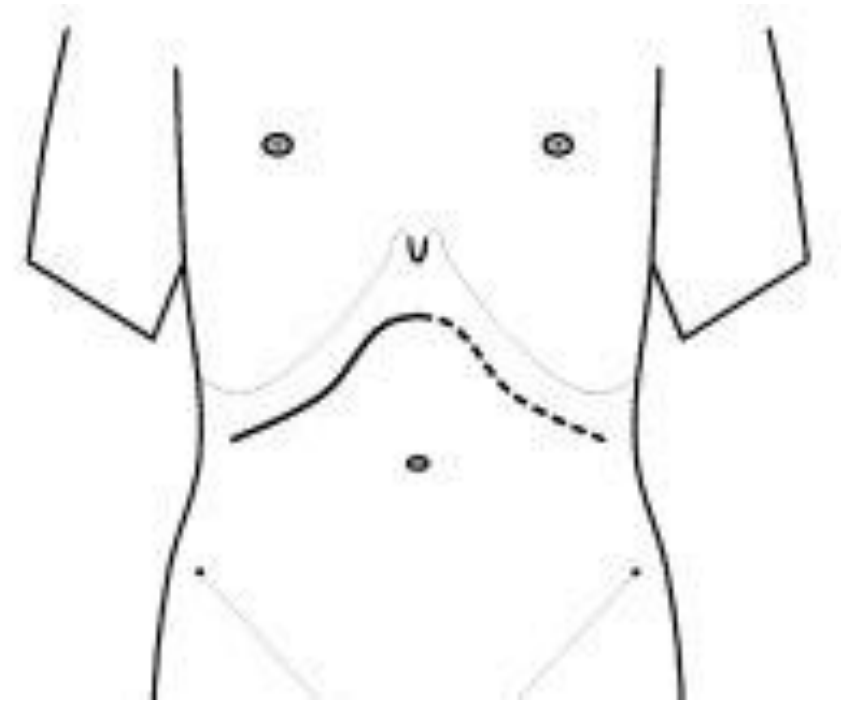


Chevron (Rooftop) Modification

The incision may be continued across the midline into double Kocher's incision or rooftop appearance which provide excellent access to upper abdomen particularly in those with broad costal margin

Uses

- Total gastrectomy
- Total esophagectomy
- Extensive hepatic resection
- Bilateral adenectomy



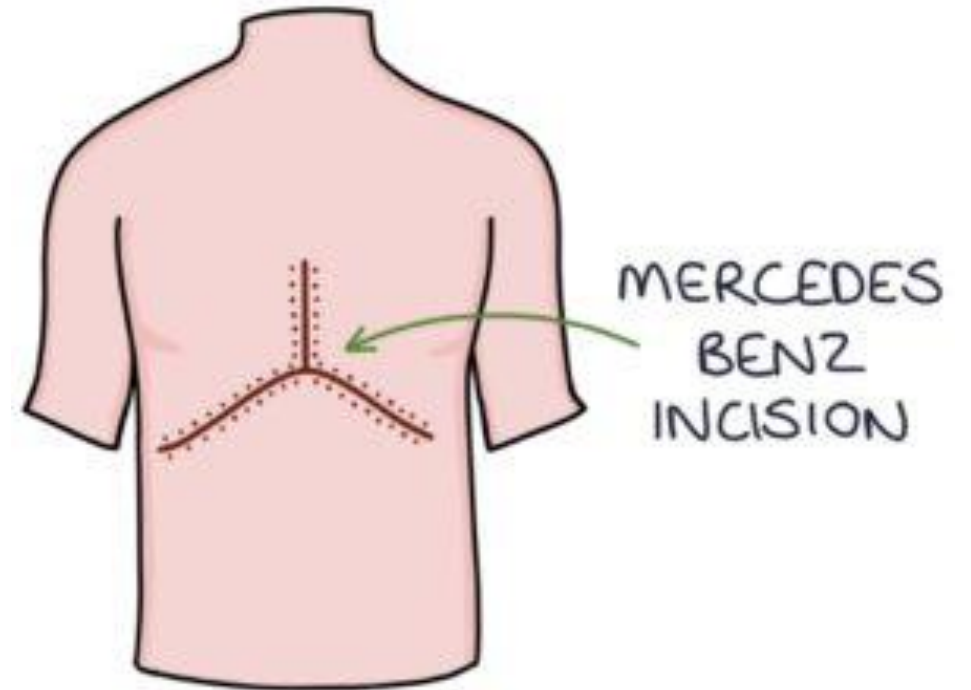


TYPES OF KOCHER'S INCISION



Mercedes benz Modification

- Consists of bilateral low Kocher's incision with upper midline **incision up to the xiphisternum.**
- Provides excellent access to the upper abdominal viscera mainly the **diaphragmatic hiatuses**



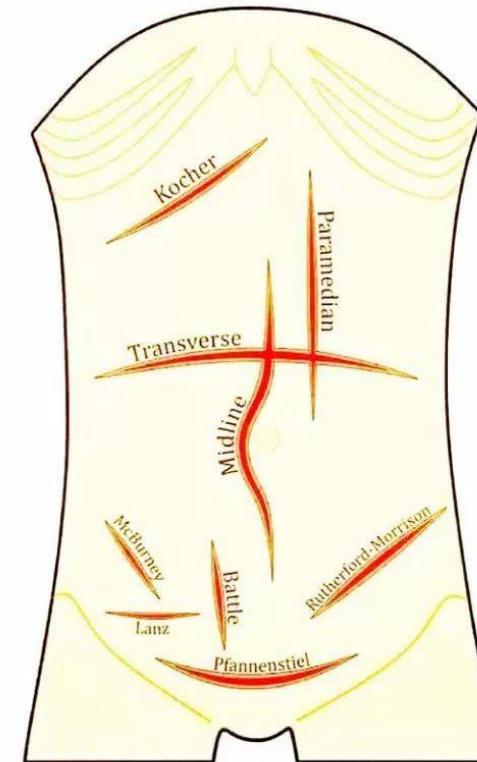


TRANSVERSE MUSCLE DIVIDING



- In newborn and infants, this incision is preferred because more abdominal exposure is gained per length of incision than with vertical exposure
- Because infants' abdomen longer transverse than vertical girth.
- Also true of short, obese adult

Abdominal incisions

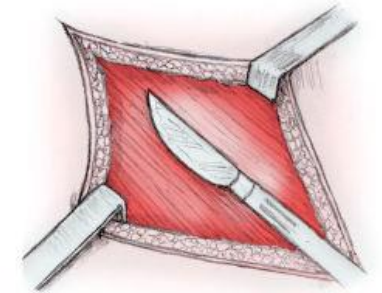
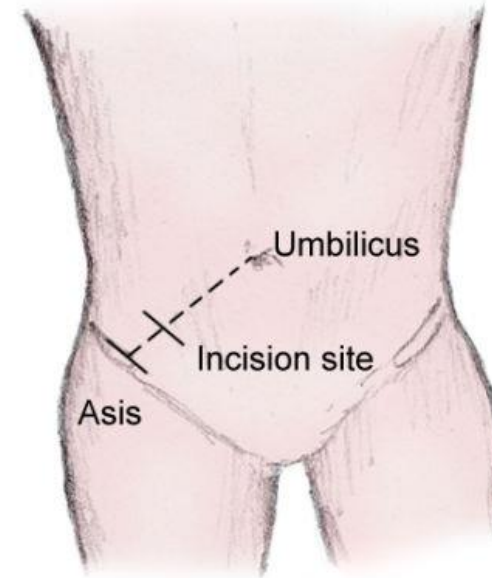




MCBURNEY GRID IRON (MUSCLE SPLIT)

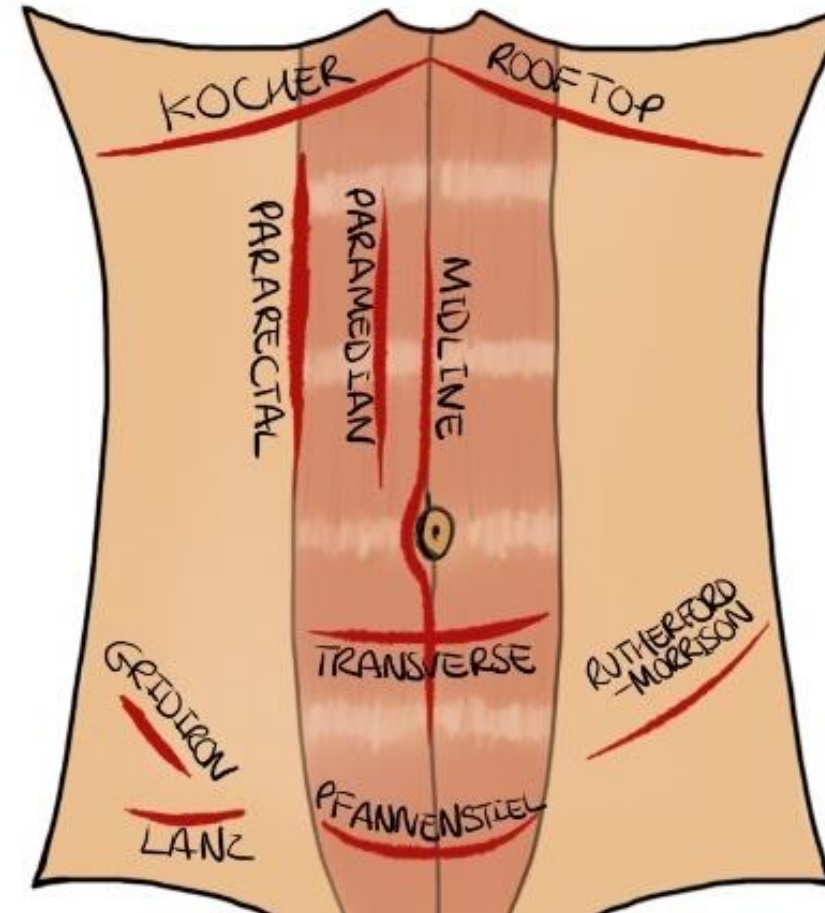


- Incision of choice most **appendicectomies**
- The level and length of incision will vary according to thickness of abdomen wall and suspected position of appendix.
- It is made at the junction of middle third and outer third of a line running from umbilicus to anterior superior iliac spine - McBurney point.
- Originally placed the incision obliquely from above laterally to below medially.
- Also used in left lower quadrant of abdomen to deal with issues in sigmoid colon



LANZ INCISION

- It is a variation of McBurney's incision that is made the same point but in transverse plane
- It gives cosmetically good scar
- Incision of choice most **appendicectomies**

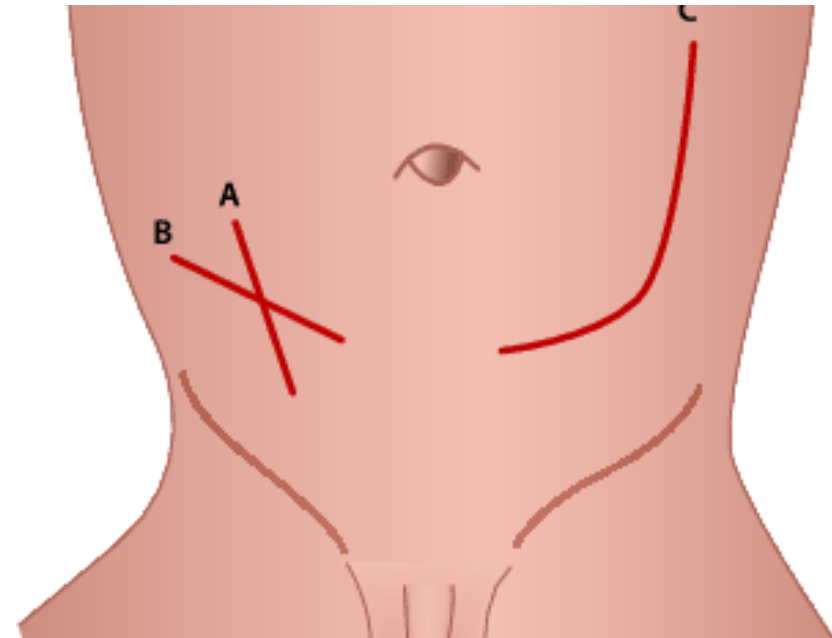




OBLIQUE MUSCLE CUTTING INCISION

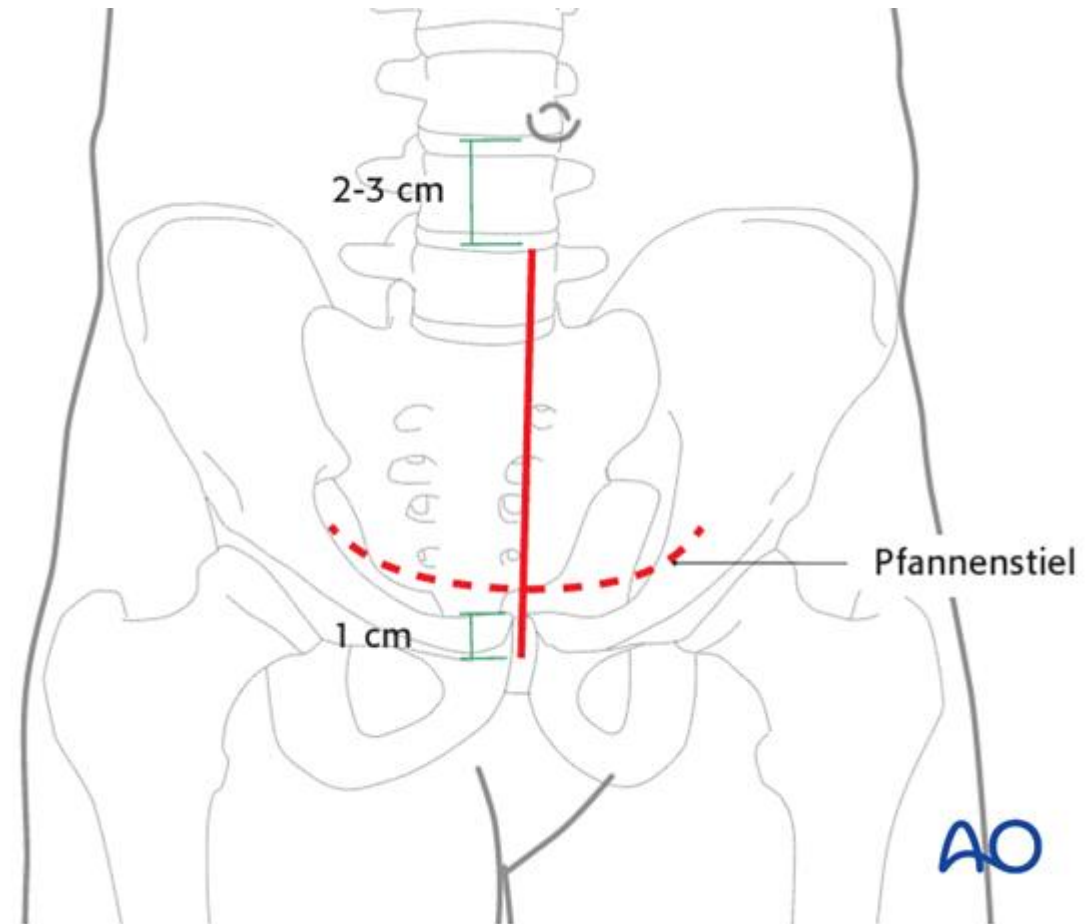


- Eponym of **Rutherford-Morrison Incision**
- Extension of McBurney incision by division of oblique fossa
- Can be used for right and left sided colonic resection, cecostomy or sigmoid colostomy



PFANNENSTIEL INCISION

- Used frequently by gynecologist and urologist for access to **pelvic organ, bladder, prostate and for c- section.**
- It is usually 12 cm long and is made in skin fold approximately 5 cm above symphysis pubis.

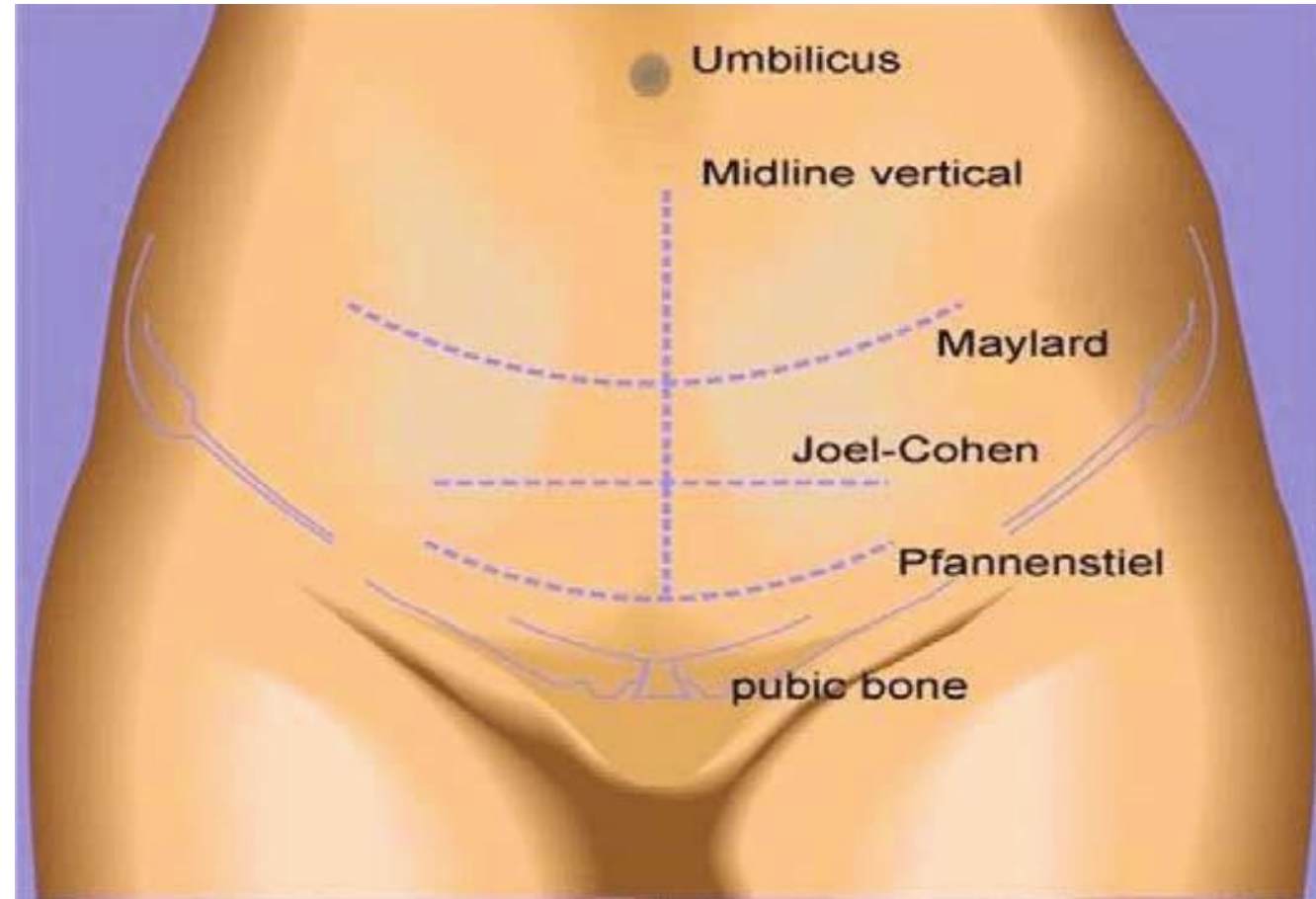




MAYLARD INCISION



- The Maylard incision is an abdominal incision that can afford extensive exposure to the pelvic organs when this is needed.
- Gives excellent exposure to pelvic organ
- Skin incision is placed above but parallel to traditional placement of Pfannenstiel incision
- Its main disadvantage is that it is a more painful incision for the patient during the first postoperative week.

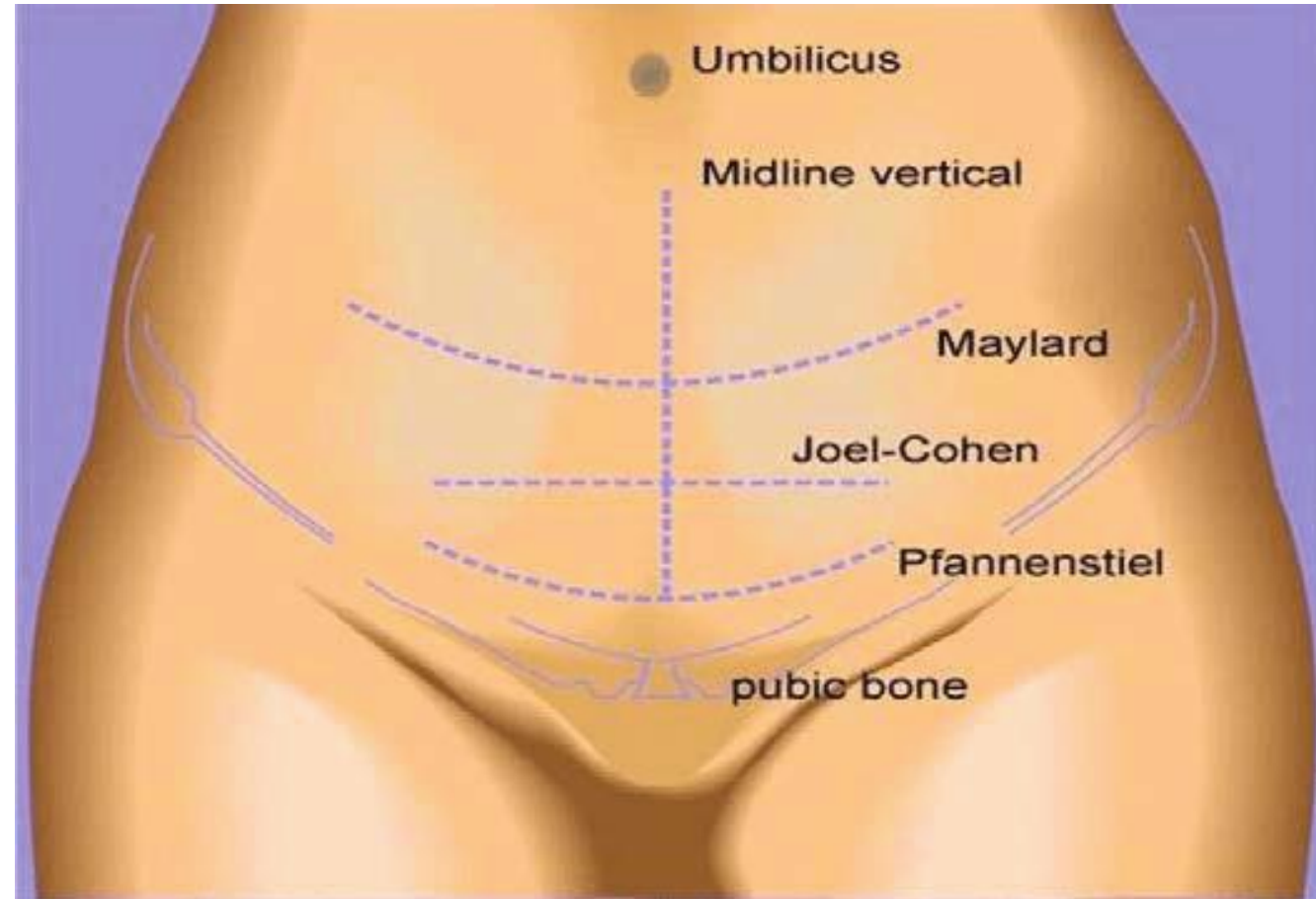




JOEL COHEN INCISION



- It's a straight incision
- It is a skin incision used for Caesarean section

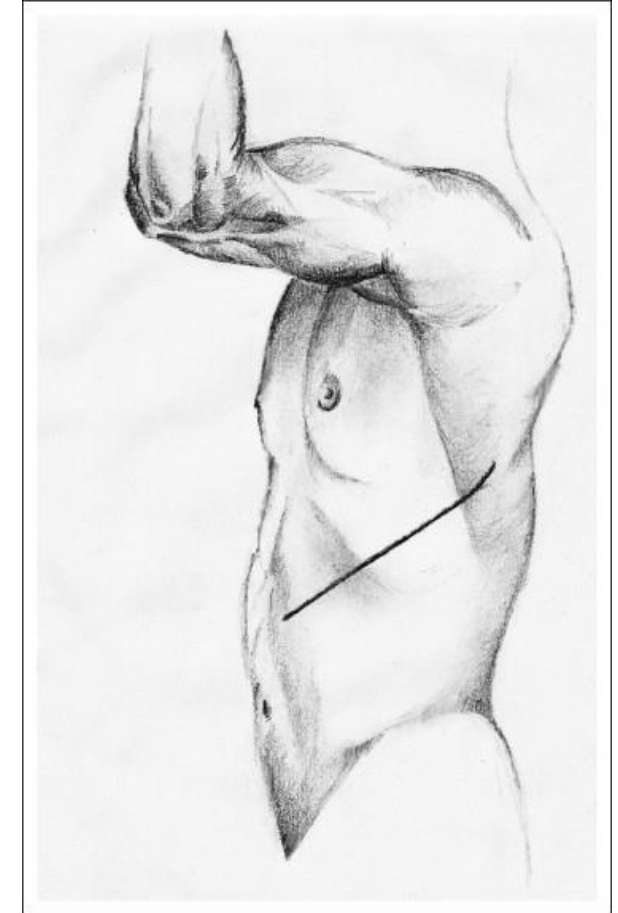




THORACOABDOMINAL INCISION



- Either right or left
- Converts pleural and peritoneal cavities into one common cavity
- Thereby gives excellent exposure
- Right incision may be particularly useful in elective and emergency hepatic resections
- Left incision may be used in resection of lower end of esophagus and proximal portion of stomach.
- Incision is extended along line of 8th intercostal space, the space immediately distal to inferior pole of scapula.

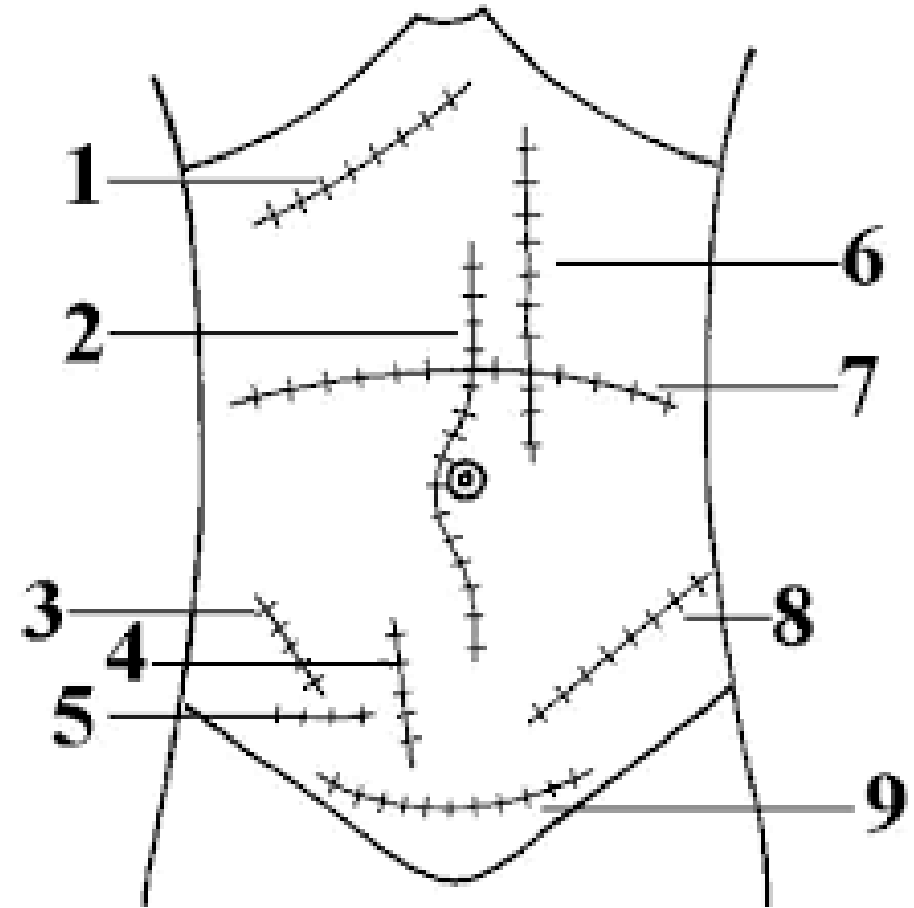




ASSESSMENT - I



Find the incisions given in the picture



ASSESSMENT - II

Find the incisions given with type of surgery



A



B



C



D



THANK YOU



References:

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