

Autopsy Incisions

In order to reveal the deeper tissues and organs during autopsy, it is customary to make incisions in the skin and subcutaneous soft tissue and then reflect those incisions. Accessing the internal structures of the thorax necessitates the removal of some of the thoracic cage.

A block of 12–20 cm in height is to be placed between the scapulae to keep the spine in a neutral posture and allow the neck to be extended before any incisions are undertaken.

Different types of incisions made commonly for internal examination are:

1. I-shaped incision
2. Y-shaped incision
3. Modified Y-shaped incision

I-SHAPED INCISION

- It is the most common incision used practically for postmortem examination.
- This classical, midline incision runs in a straight line from the undersurface of the extended chin to the pubis, deviating slightly at the umbilicus to avoid cutting it (**Figs 3.1 and 3.2**).
- The umbilicus is left unaltered to preserve its aesthetic value, and because its dense fibrous tissue makes it challenging to cut through and, subsequently, to suture after postmortem examination.
- The incision should not ideally extend above the chin, as this would leave the suture line visible even when wearing a high neck wrap or collar.
- To avoid piercing the peritoneal lining or the intestines, the abdominal part of the incision must be performed with extreme caution, especially if the abdomen is bloated.
- If any surgical sutures or wounds are in place along the midline, then the direction of the incision is to be altered in that part to leave the area of interest intact. The same can then be examined from the underside of the skin after the skin has been reflected.

Advantages

The foremost advantage of an I-shaped incision is that it is fairly quick to make.



Fig. 3.1: I-shaped incision process



Fig. 3.2: I-shaped incision

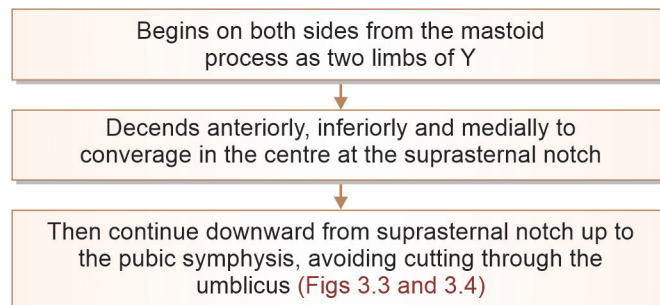
Disadvantages

- The visible stitch mark after postmortem examination will be distressing for already aggrieved family members.
- Difficulty in examining deeper neck structures/layer dissection of the neck.

Y-SHAPED INCISION

- After I-shaped incision, the Y-shaped incision is commonly used in routine practice (**Flowchart 3.1**).

Flowchart 3.1: Steps of Y-shaped incision



Advantages

- This incision is employed in medicolegal autopsies when it is necessary to dissect the neck layer by layer in order to show injuries and ligature marks, such as in cases of death from compression of the neck in mechanical asphyxia, like hanging, strangulation, or throttling.



Fig. 3.3: Y-shaped incision



Fig. 3.4: Neck dissection during Y-shaped incision

MODIFIED Y-SHAPED INCISION

- The third most common incision used is modified Y-shaped incision.
- It is generally given in high-profile individuals whose bodies are to be preserved for a final public tribute in order to prevent ugliness and public backlash (**Flowchart 3.2**).

Flowchart 3.2: Steps of modified Y-shaped incision

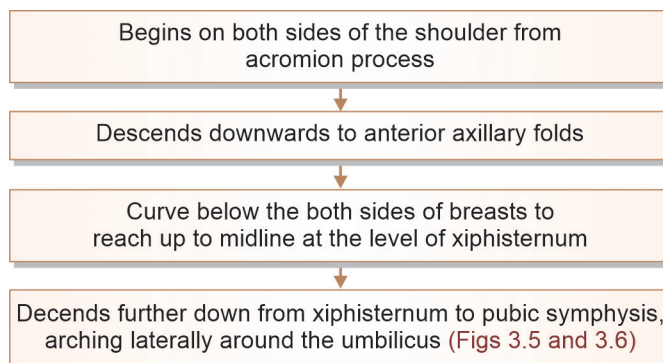




Fig. 3.5: Modified Y-shaped incision



Fig. 3.6: Neck dissection during modified Y-shaped incision

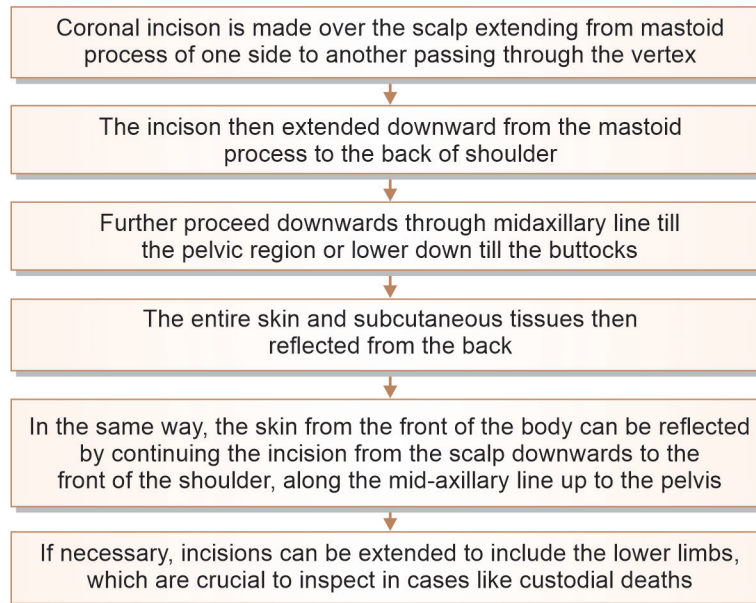
For confirmation of any suspected injury on the back or any other body parts, additional incisions must be given at specific locations since hidden injuries of the posterior portion of the body are not observed in all these incisions. In case the spinal cord needs to be dissected and examined, a second incision is given in the back in order to examine the spinal cord.

Besides above mentioned three primary incisions, another incision could also be made, which can also be called as cosmetic incision.

COSMETIC INCISION

Step (Flowchart 3.3)

Flowchart 3.3: Steps of cosmetic incision



Advantages

- As its name implies *cosmetic*, it is designed to keep the sutures concealed while the body is returned to the family for its last rites.
- This incision allows for the exposure of contusions, even if they are deeply seated on the front or back of the body.
- In this approach, no separate incision is required to expose the spinal canal; it can be done while the body is in the prone position, with the reflection of the entire flap of skin in the posterior side.

Disadvantage

- The only disadvantage of this method is that it is somewhat more time consuming than traditional methods.

EXPOSING THE BODY CAVITIES

- After the chosen skin incision has been made, the skin, subcutaneous tissues, and fat are all removed through that incision.
- In neck region, this is done until the inner two-thirds of the collar bones and the lateral margin of the neck are visible.
- The tip of the scalpel, in particular, or the edge of the blade might rip the skin; resulting in *button holes*, hence extreme caution is suggested while operating at the lateral edge of the neck.
- In the chest region, the pectoral muscles and other tissue in the front of the chest area should be dissected all the way to the mid-axillary line (**Fig. 3.7**).
- The anterior abdominal wall is dissected by reflecting the skin, subcutaneous tissues, and muscles underneath.



Fig. 3.7: Dissection of chest region

Exposing the Chest Cavity

- Once pneumothorax has been ruled out, the chest cavity can be accessed.
- The sternum has to be removed for exposing the chest cavity (**Flowchart 3.4**).

Flowchart 3.4: Steps in exposing the chest cavity

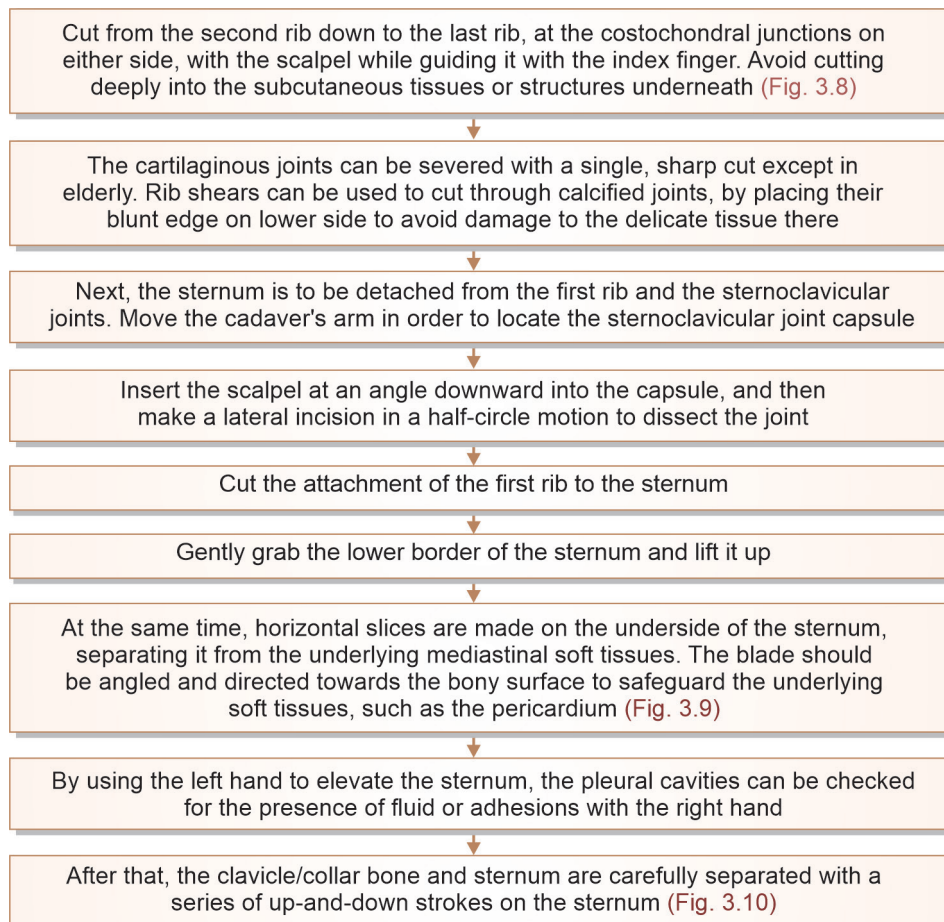




Fig. 3.8: Dissection of costochondral junction



Fig. 3.9: Dissection on underside of sternum



Fig. 3.10: Removal of sternum

Exposing the Abdominal Cavity (Flowchart 3.5)

Flowchart 3.5: Steps in exposing the abdominal cavity

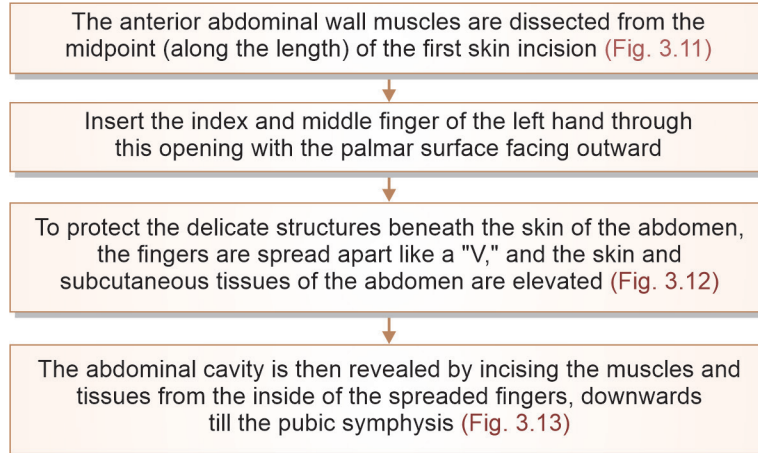


Fig. 3.11: Dissection of anterior abdominal wall



Fig. 3.12: Protecting underneath structures of abdomen during dissection



Fig. 3.13: Chest and abdominal cavities exposed

Summary with Key Points

Incisions have to be made on the body for deeper dissection during postmortem examination. The type of incision to be given depends upon the type of case or on the dissector's preference. Commonly I-shaped incision is given as it is fast and easy to be made. The Y-shaped incision should be given in cases where pathology is suspected in the deeper neck structures. After giving primary skin incisions, the thoracic cavity is exposed by removing the sternum. The abdomen cavity is exposed by cutting through skin, subcutaneous tissues, muscles, and peritoneum.

FURTHER READING

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