

Suture techniques

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There are four frequently used suture techniques. 1 Interrupted sutures . Interrupted sutures require the needle to be inserted at right angles to the incision and then to pass through both aspects of the suture line and exit again at right angles (Figure 7.13a). The needle needs to be rotated through the tissues rather than to be dragged through for fear of enlarging the needle hole. As a guide, the distance from the point of the needle to the edge of the wound should be approximately the same as the depth of the tissue being sutured, and each successive suture should be placed at twice this distance apart (Figure 7.13b suture should reach into the depths of the wound and be placed at right angles to the axis of the wound. In linear wounds, it is sometimes easier to insert the middle suture first and then to complete the closure by successively inserting sutures, halving the remaining deficits in the wound length. 2 Continuous sutures . For a continuous suture, the first suture is inserted in an identical manner to an interrupted suture, but the rest of the sutures are inserted in a continuous manner until the far end of the wound is reached (Figure 7.14). Each throw of the continuous suture should be inserted at right angles to the wound and this will mean that the externally observed suture material will usually lie diagonal to the axis of the wound. It is important to have an assistant who will follow the suture, keeping it at the same tension to avoid either purse stringing the wound by too much tension or leaving the suture material too slack. There is more danger of producing too much tension by using too little suture length than there is of leaving the suture line too lax. Postoperative oedema will often take up any slack in the suture material. At the far end of the wound, this suture line should be secured either by using an Aberdeen knot or by tying the free end to the loop of the last suture to be inserted. 3 Mattress sutures . Mattress sutures may be either vertical or horizontal and tend to be used to produce either eversion or inversion of a wound edge (Figure 7.15). The initial suture is inserted as for an interrupted suture, but then the needle moves either horizontally or vertically - and traverses both edges of the wound once again. Such sutures are very useful in producing an accurate approximation of wound edges, especially when the edges to be anastomosed are irregular in depth or disposition. 4 Subcuticular suture . This technique is used in skin - where a cosmetic appearance is important and where the skin edges may be approximated easily (Figure 7.16). The suture material used may be either absorbable or

Straight Compound curve Needles used for suturing the abdominal wall: Round-bodied needles for peritoneum, muscles and fat Cutting needles for aponeurosis

Figure 7.13 (a) (b) Figure 7.14 non-absorbable. For non-absorbable sutures, the ends may be secured using a collar and bead, or tied loosely over the wound. When absorbable sutures are used, the ends may be secured using a buried knot. Small bites of the subcuticular tissues are taken on alternate sites of the wound and then gently pulled together, thus approximating the wound edges without the risk of the cross-hatched markings of interrupted sutures.

(a) (b) X X 2X X Interrupted suture technique. Reproduced with permission from Royal College of Surgeons of England. The siting of sutures. As a rule of thumb, the distance of insertion from the edge of the wound should correspond to the thickness of the tissue being sutured (x). Each successive suture should be placed at twice this distance apart ($2x$). Continuous suture technique.

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