Transcript

This video demonstrates a suprapubic transverse incision that is commonly used in obstetric and gynaecological surgery. The layers are clearly defined here using sharp dissection to help you understand lower abdominal anatomy as seen in live surgery. During caesarean section however, many of these layers may be separated using blunt finger dissection. Variations in technique can be discussed with one of the course faculty.

A transverse incision is made approximately two finger breadths above the pubic bone and extended laterally an equal amount either side to ensure adequate access for the planned surgical procedure. The subcutaneous fat is incised as far as the rectus sheath.

The rectus sheath is incised transversely taking care not to damage underlying muscles. Haemostasis is secured as soon as possible. In this case, using monopolar diathermy forceps to coapt the bleeding vessel.

The incision is extended laterally with curved scissors. The assistant worked with the surgeon to expose the rectus sheath. Care is taken not to damage underlying muscles. The incision is extended beyond the rectus muscles on either side. This is to ensure adequate access for the planned surgical procedure.

The lower rectus sheath is then mobilised away from the underlying muscles. It is picked up with tissue forceps to aid dissection. In many women the pyramidalis muscle overlies the rectus muscle. It is triangular in shape with its space attached to the pubic bone. This muscle is absent here which makes surgery easier. Care is taken to identify the correct tissue planes and minimise bleeding.

The rectus sheath above the incision is reflected away from the underlying rectus abdominis muscles. Tissue forceps are used to elevate the sheath. Perforating vessels are common. Haematosis can be secured using monopolar diathermy forceps prior to dividing them.

Care should be taken particularly in the midline if the patient has had previous surgery in case the bowel or bladder is adhered to the sheath.

The rectus abdominis muscles are separated vertically in the midline. The change in direction of entry through the different layers reduces the risk of subsequent hernia formation.

Care is taken not to probe beneath the rectus abdominis muscles in case the inferior epigastric vessels are damaged causing bleeding that is difficult to control. As the muscles are separated, the surgeon ensures that underlying structures such as the bladder or bowel are not inadvertently damaged.

Prior to incision, the peritoneum is picked up with forceps and palpated to ensure that bowel is not included. The fingers are inserted to lift the peritoneum while the incision is extended taking care inferiorly to avoid the bladder. It should be noted that the bladder is commonly higher than anticipated during caesarean section.
**Closure of Suprapubic Transverse Abdominal Incision**

When closing a suprapubic transverse incision, there are two layers that require surgical closure, the rectus sheath and the skin. There is no clear advantage in closing the peritoneum or Scarpa’s fascia. Note that the assistant is using a retractor to expose the lateral extension of the sheath incision. This is to minimise the risk of needlestick injury to themselves while providing optimum exposure for the surgeon. A heavy or number 1 absorbable suture is used to close the sheath. The angle is first secured with a reef or square knot.

Then a continuous suture is used to approximate the rectus sheath.

A non-absorbable suture is rarely required for suprapubic incision as the risk of incisional hernia is low.

Small bites are taken along the suture line until the lateral extension is reached. When securing the end of the suture line at the lateral extension of the incision, the needle should be guarded for knot tying.

See here how the needle has rotated in the needle forceps putting the surgeon and assistant at risk of needlestick injury.

One method of closing the skin is to use an absorbable subcuticular suture. The suture is first fixed to the subcuticular tissue, most likely here the surgeon has used the lateral Scarpa’s fascia.

See how the needle is not handled but manipulated between the needle holder and the forceps. The skin edge is drawn together as sutures pass perpendicularly across the wound.

In this case, the lateral extension of the skin incision is secured with a buried knot. Other methods of securing the end of the suture can be discussed with the course faculty.

Finally, we shall look at another method of closing the skin using a non-absorbable monofilament subcuticular suture. This will need to be removed after five to seven days.

**Closure of skin using prolene suture and handheld needle**

A handheld needle is being used. The risk of needlestick injuries is much greater if the surgeon is careless. You will note how meticulous the surgeon is when handling the needle and placing sutures. The skin is closed with small bites of subcuticular tissue with the suture passing perpendicularly across the wound. The suture end is fixed with a bead which will then be removed prior to suture removable at a later date.

I hope that this video has been informative. There are many methods of suprapubic transverse abdominal incision and closure. Those demonstrated here are just an example. Please discuss other methods with the course faculty.