Caesarean section video – transcript

This video will demonstrate how to perform caesarean sections safely. Prior to starting the procedure, the WHO checklist is done. It is important not to start the caesarean section until the checklist is done to confirm the patient’s identity, the operation she is having and any other risks or concern.

First, the abdomen is cleaned with an antiseptic and the area is draped.

We will perform the caesarean section using a low, transverse, suprapubic incision as this heals well with minimal discomfort for the patient. The pubic symphysis is palpated, the incision is made approximately two finger breadths, or roughly 2 cm, above the pubic symphysis just below the pubic hair line. The knife is held perpendicular to the skin using a firm, sustained pressure and incision is made into the skin. The incision is straight, just above the pubic symphysis and approximately 10 to 12 cm long. The subcutaneous fat layer can be incised using a knife or cutting diathermy as demonstrated in the video.

The blood vessels are cauterised to secure haemostatis.

The rectus is visible as a glistening white layer after opening the subcutaneous fat layer. Rectus sheath is also opened horizontally as skin. Care must be taken to avoid cutting deeply into the rectus sheath as the underlying rectus muscles can be incised, resulting in bleeding.

The incision is made centrally on the rectus sheath and extended laterally on both sides. It is important to keep the tips of the scissors pointing upwards as there is a risk of cutting the underlying muscles. The video demonstrates this step. Some surgeons prefer the Cohen incision where the incision is made on the medial 3 cm and the lateral tissue is separated manually by inserting the index and middle fingers under the rectus sheath and stretching it. Then the abdomen is opened bluntly with fingers. The sheath is then elevated and separated from the rectus muscle. The video demonstrates the sheath held with Little Woods Tissue Holding forceps. This step increases the available space to perform the procedure. The sheath is also separated from the muscle in the downward direction. Sometimes, pyramidalis muscle is encountered just behind the lower end of the rectus sheath. The fibrous tissue of pyramidalis can be divided in the midline. One should be careful to avoid damaging the bladder underneath. It is important to go high up in opening the parietal peritoneum as with repeated caesarean section there is a risk of bladder injury if the bladder is adherent and pulled up. The parietal peritoneum is opened high up and demonstrated by holding it with two Spencer Wells forceps and palpating for any bowel before cutting it with scissors.

On entering the peritoneal cavity, the opening is stretched by eight-finger stretch technique as demonstrated in the video. It is important not to stretch the rectus muscle alone, as there are perforators which can get damaged and may cause rectus haematoma formation. A doyen retractor is placed to protect the bladder. Uterus will be visible unless there are adhesions of bladder, bowel or omentum. The visceral peritoneum is identified by lifting the peritoneum on the anterior surface of the uterus. The visceral peritoneum over the lower uterine segment will be identified as it will be loose and can be lifted upwards as compared
to the upper uterine segment. The visceral peritoneum is opened with scissors and the bladder is reflected behind the doyen retractor.

A horizontal incision is made on the uterus centrally to open the entire thickness of the uterine muscle, gradually going deep until the membranes are visible. Care should be taken to avoid damage to the baby.

The uterus is then opened in both directions by either inserting the fingers through the uterine incision and extending in both directions. A scissors can be used to extend the incision bilaterally, but care should be taken to keep the fingers underneath the scissors blade, protecting the baby from trauma while cutting and extending the incision upwards, reducing the risk of lateral extensions towards the broad ligament or downwards towards the ureters.

Here, delivery using Wrigley's forceps is shown whereby the left blade is inserted below the baby's head, followed by the right blade. The blades are then locked and the head gently lifted through the uterine incision. In many cases, the fetal head can be simply delivered by inserting the dominant hand through the uterine incision and lifting the fetal head, followed by fundal pressure by the assistant. In cases where the head is deep in the pelvis, it can be beneficial to have an assistant push the head up vaginally before opening the uterus.

The baby is passed on to the midwife or paediatrician. The cord is clamped and cut. Umbilical cord gasses can be done if needed as shown in the video by taking blood samples from the artery and a vein.

The placenta usually separates easily after oxytocin bolus.

The uterine angles are identified.

The upper part of the uterine cavity is cleaned and explored digitally to confirm it is empty. There should never be any placenta tissue or membranes left in the case of caesarean section. The uterine angles are stitched separately to secure haemostasis. Here, the surgeon is securing one uterine angle and the suture is held with a Spencer Wells forceps.

The angle suture should not be too wide, as it will result in a bulky pedicle and may not secure haemostasis and result in bleeding later on.

The uterus is closed with a continuous suture. Some surgeons prefer to lock the first layer suture as shown in the video. The upper edge of the incision appears shorter and thicker while the lower edge looks longer. This is due to the retraction of the lower segment; therefore, during suturing, longer gaps are allowed on the lower edge to approximate the edges.

The second layer of the suture tends to bury the first layer. Second layer is sutured by continuous running suture. Care must be taken not to go beyond the already tied uterine angles, otherwise it can result in unnecessary trauma to large blood vessels present laterally. It is vital to confirm and secure haemostasis from the uterine incision before
closing the peritoneal cavity. If needed, haemostatic sutures are applied to secure haemostasis.

It is rarely necessary to exteriorise the uterus and the uterine incision can be sutured with the uterus in situ. Visceral peritoneum is not sutured routinely, as it may result in pulling the bladder upwards. Both the ovaries and fallopian tubes are inspected for any cysts as it may require removal at the same time as caesarean section. Otherwise there can be a risk of torsion later as the uterus involutes. In order to visualise the ovaries, the hand is passed over the fundus, posteriorly, and swept downwards and slightly forwards. Current evidence suggests that it is also not necessary to close the parietal peritoneum.

It is important to check for any perforating blood vessels and cauterise them if needed prior to closing the rectus sheath. The rectus sheath is closed with a continuous, running suture. It is not haemostatic so the suture should not be under tension and the aim should be to oppose the edges for healing.

Note that the rectus sheath angle on the patient's right side has been identified using a Spencer Wells tissue forceps to avoid failure to secure this.

The subcutaneous fat and scarpa’s fascia can be closed with interrupted sutures to close the dead space, although it is not necessary if the thickness of the subcutaneous tissue is less than 2 cm.

The skin can be closed with subcuticular sutures.

WHO checklist is again done at the end to raise any concerns for recovery room.

In this case, the surgeon is using beads to secure the prolene suture in place, but staples can equally be used. You can see a bead and metal ring being threaded through. A Denis Browne crusher is used to secure the ring onto the suture.