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University Health Board

Techniques for Caesarean Section

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Purpose of the Guideline

Rates of caesarean section (CS) have been rising globally. It is important to use the most effective and safe technique.

The following recommendations for surgical techniques apply to pregnancies at term where there is a lower uterine segment. Techniques may need modification in situations such as repeat CS, placenta praevia or very pre-term pregnancies.

General recommendations

- Safe surgical practice should be followed at CS to reduce the risk of blood borne infections of staff. Health Care professionals should follow the Health Board Policy on universal protection for infection control
- The mother should have a lateral tilt of 15°until delivery of the baby, because this reduces maternal hypotension
- Cleansing the vagina immediately before a caesarean delivery with either an iodine-based or chlorhexidine based solution probably reduces the risk of infection of the uterus after a caesarean section. This benefit may be greater for women who have their caesarean delivery after their membranes have already ruptured or they are already in labour. This is a generally simple, well tolerated way to lower the chances of developing an infection after having a baby by caesarean. Cochrane review, July 2018; NICE guideline [NG192]
- Maternal bladder should be catheterised with Foley's catheter
- If there is a need for hair removal clippers should be used – shaving of hair with razor blade is not recommended
- Use Chloraprep for skin disinfection – refer to appendix 1 "Using Chloraprep"
- Antibiotic prophylaxis to be given prior to skin incision.

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- CS should be performed using a transverse abdominal incision because this is associated with less postoperative pain and an improved cosmetic effect compared with a midline incision
- The transverse incision of choice should be the Joel Cohen incision (a straight skin incision, 3 cm above the symphysis pubis; subsequent tissue layers are opened bluntly and, if necessary, extended with scissors and not a knife), because it is associated with shorter operating times and reduced postoperative febrile morbidity compared to Pfannenstiel incision (curved skin incision, two-fingers breadths above the symphysis pubis, transverse incision of the sheath,

rectus muscles are separated bluntly and the parietal peritoneum is incised is the midline).

- The use of separate surgical knives to incise the skin and the deeper tissues at CS is not recommended because it does not decrease wound infection.

- Great caution should be taken while incising the uterine wall and the amniotic membrane to avoid fetal lacerations (2% risk of fetal laceration during CS) particularly in presence of thin uterine wall, ruptured membranes and anterior placenta previa where bleeding could obscure vision. Consideration should be given to using blunt instruments. When there is a well formed lower uterine segment, blunt rather than sharp extension of the uterine incision should be used as it reduces blood loss, incidence of postpartum haemorrhage, and the need for transfusion at CS.

- Wrigley's Forceps should only be used at CS if there is difficulty delivering the baby's head. (The effect on neonatal morbidity of the routine use of forceps at CS remains uncertain).

- **If head is deeply engaged, follow 'Management Impacted Fetal Head at Caesarean section' algorithm: Appendix 2 (Algorithms 1-4)**

- Delay cord clamping by 1 minute (in absence of fetal compromise). Double clamp the cord.

- Oxytocin 5 IU by slow intravenous injection should be used at CS to encourage contraction of the uterus and to decrease blood loss. Tranexamic acid 1 gm in addition is recommended in presence of risk factors for PPH.

- The placenta should be removed using controlled cord traction and not manual removal as this reduces the risk of endometritis.

- Ensure placenta is removed completely.

- Intra-abdominal repair of the uterus at CS should be undertaken. Exteriorisation of the uterus routinely is not recommended because it is associated with maternal nausea/vomiting and more pain, and does not improve operative outcomes such as haemorrhage and infection

- There is not enough evidence to recommend either single layer or double layer closure

- Neither the visceral nor the parietal peritoneum should be sutured at CS because this reduces operating time and the need for postoperative analgesia and improves maternal satisfaction

- If inserting a peritoneal drain in rare cases use a No.16 drain without suction

- In the rare circumstances that a midline abdominal incision is used at CS, mass closure with slowly absorbable continuous sutures (like PDS) should be used because this results in fewer incisional hernias and less dehiscence than layered closure

- Routine closure of the subcutaneous tissue space should not be used, unless the woman has more than 2 cm subcutaneous fat or is very thin (to avoid skin puckering down onto the rectus sheath)

- Superficial wound drains should not be used at CS because they do not decrease the incidence of wound infection or wound haematoma

- Skin incision should preferably be closed with subcutaneous stitches with a dissolvable monofilament suture material (but the effects of different suture materials or methods of skin closure at CS are not certain). Consider using interrupted sutures with curved needle in women with blood-borne infections. Use of staples is not advisable as it is associated with increased wound infection and wound dehiscence. NICE Guideline NG192

- If pressure dressing has been applied, it should be removed within 6 hours and wound assessed

- Consider PICO (negative pressure) dressing in women with BMI > 40 or in presence of other risk factors like diabetes, previous wound infection.

- Umbilical artery pH should be performed after all CS for suspected fetal compromise, to allow review of fetal well-being and guide ongoing care of the baby

- Women having a CS should be offered prophylactic antibiotics prior to sken incision, as per local microbiology guidelines, to reduce the risk of postoperative infections (such as endometritis, urinary tract and wound infection), which occur in about 8% of women who have had a CS

- Women having a CS should have a VTE risk assessment. The choice of method of prophylaxis (for example, graduated stockings, hydration, early mobilisation,

low molecular weight heparin) should take into account their risk of thromboembolic disease and follow existing guidelines.

- Where regional anaesthesia has been used, indwelling catheter should be removed after 12 hours post operatively.

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Checklist for Clinical Guidelines being Submitted for Approval

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Name(s) of Author:	Madhuchanda Dey
Chair of Group or Committee approving submission:	Labour Ward Forum
Brief outline giving reasons for document being submitted for ratification	It is important to use the most effective and safe technique. This document gives recommendations for surgical techniques for term pregnancies with a lower uterine segment.
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