



Aneurin Bevan University Health Board

Guideline for Cervical Cerclage

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Appendix 1 Guideline For Cervical cerclage

Appendices

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Executive summary:

This document should act as guidelines for the management of women with previous preterm births or mid trimester losses who are at high risk of recurrence of events and management of women with previous failed cerclage. The opinion expressed in this guideline is evidence based and reflects professional opinion. They are designed to support safe and effective practice.

Scope of the guidelines:

- The guideline applies to all clinicians working within the maternity services.

Essential implementation criteria:

- Auditable standards are stated.

Aims

- To provide support to clinical decision making
- To provide support for evidence based management

Responsibilities

- The maternity management team

Training

- Staff are expected to access appropriate training where provided
- Training needs will be identified through appraisal and clinical supervision

Monitoring and Effectiveness:

- Local service improvement plan will guide monitoring and effectiveness. This policy has undergone an equality impact assessment screening process using toolkit designed by NHS centre Equality and Human rights.
- Details of the screening process for this policy are available from the policy owner.

Implementation

- The guidelines will be implemented for the patients with previous history of preterm births or mid trimester losses at high risk of recurrence of events and patients with previous failed cervical cerclage.

Standards for Health Services Wales

Has an equality impact assessment been carried out?

- YES

Has any adverse impact been identified?

- NO

Environmental Impact

- NO

Audit

- Audit tools have been incorporated in the protocol.

Review

- Protocol to be reviewed in 3 years.

CERVICAL CERCLAGE GUIDELINE

Preterm birth (before 37 weeks' gestation) is the single biggest cause of neonatal mortality and morbidity in the UK. Cervical insufficiency contributes to the burden of preterm deliveries and therefore cervical cerclage has become a part of obstetric care. Cervical insufficiency is usually defined by painless dilation and shortening of the cervix before 37 weeks in the absence of uterine contractions.

Cervical insufficiency is an imprecise clinical diagnosis frequently applied to women with such a history, where it is assumed that the cervix is 'weak' and unable to remain closed during the pregnancy. Recent evidence suggests that, rather than being a dichotomous variable, cervical integrity is likely to be a continuum influenced by factors related not solely to the intrinsic structure of the cervix but also to processes driving premature effacement and dilatation. While cerclage may provide a degree of structural support to a 'weak' cervix, its role in maintaining the cervical length and the endocervical mucus plug as a mechanical barrier to ascending infection may be more important.

The incidence of true cervical insufficiency has been estimated to be less than 1% of the obstetric population. There is no diagnostic test for cervical insufficiency, however, transvaginal ultrasound assessment of cervical length has been used for cervical length assessment as cervical shortening correlates with the risk of preterm delivery.

Ultrasound surveillance of cervical length is advocated in women at high and intermediate risk and the timing of which is dependent on the women's history.

Women at **high risk** are recommended to be reviewed by a preterm prevention specialist by 12 weeks where possible, or with the dating scan whichever is sooner and offered transvaginal scan every 2–4 weeks between 16 and 24 weeks

- those with a previous preterm birth or second trimester loss (16–34 weeks' gestation)
- previous use of cerclage
- known uterine variant
- intrauterine adhesion
- history of trachelectomy

Women at **intermediate risk** should undergo a single transvaginal scan no later than **18–22** weeks as a minimum.

- significant cervical excisional surgery i.e. large loop excision of the transformation zone (LLETZ) with an excision depth greater than 1 cm, more than one procedure or a cone biopsy.

However, when a short cervix is identified in women who have had serial screening but do not have a history of a previous preterm birth; an ultrasound indicated cerclage may be considered.

History-indicated cerclage

Insertion of a cerclage as a result of factors in a woman's obstetric or gynaecological history, which increase the risk of spontaneous second trimester loss or preterm birth.³ A history-indicated suture is performed as a prophylactic measure in asymptomatic women and usually inserted as a planned procedure at 11–14 weeks of gestation.

Ultrasound-indicated cerclage

Insertion of a cerclage as a therapeutic measure in cases of cervical length shortening seen on transvaginal ultrasound.³ Ultrasound-indicated cerclage is performed on asymptomatic women who do not have exposed fetal membranes in the vagina. Sonographic assessment of the cervix is usually performed between 14 and 24 weeks of gestation by transvaginal scan and with an empty maternal bladder.

Emergency cerclage (also known as physical exam-indicated or emergency cerclage)

Insertion of cerclage as a salvage measure in the case of premature cervical dilatation with exposed fetal membranes in the vagina.³ This may be discovered by ultrasound examination of the cervix or as a result of a speculum/physical examination performed for symptoms such as vaginal discharge, bleeding or 'sensation of pressure'. It can be considered up to 27⁺⁶ weeks gestation.¹

Transvaginal cerclage (McDonald)

A transvaginal purse-string suture placed at the cervical isthmus junction, without bladder mobilization.⁴

High transvaginal cerclage requiring bladder mobilization (including Shirodkar)

A transvaginal purse-string suture placed following bladder mobilization, to allow insertion above the level of the cardinal ligaments.⁵

Transabdominal cerclage

A suture performed via a laparotomy or laparoscopy, placing the suture at the cervicoisthmic junction.⁶

Occlusion cerclage

Occlusion of the external os by placement of a continuous non-absorbable suture. The theory behind the potential benefit of occlusion cerclage is retention of the mucus plug.⁷

Recommendation:

1. Women with singleton pregnancies and three or more previous preterm births should be offered a history-indicated cervical cerclage
2. History-indicated cerclage should not routinely be offered to women with less than three previous preterm births and/or second trimester losses without additional risk factor
3. Women with a history of one or more spontaneous second trimester loss or preterm births who are undergoing ultrasound surveillance of cervical length should be offered cerclage if the cervix is 25mm or less at gestations less than 24weeks
4. Women with a history of spontaneous second trimester loss or preterm birth who have not undergone a history-indicated cerclage may be offered serial sonographic surveillance, as those who experience cervical shortening (less than 25mm) may benefit from ultrasound-indicated cerclage
5. Women with a previous unsuccessful transvaginal cerclage, insertion of a transabdominal cerclage may be discussed and considered, which could be preconception or in early pregnancy
6. Insertion of a emergency cerclage may delay birth by approximately 34 days in suitable cases compared with expectant management/bed rest alone
7. Advanced dilatation of the cervix (more than 4cm) or membrane prolapse beyond the external os appears to be associated with a high chance of cerclage failure.
8. The choice of anaesthesia should be made by the operating team in conjunction with the woman
9. Cerclage is effective in women with a raised BMI

Not Recommended

1. Routine surveillance of women at low risk
2. The insertion of a history or ultrasound-indicated cerclage in women with multiple pregnancies
3. Women with a singleton pregnancy and no other risk factors for preterm birth, with an incidentally identified short cervix on a late second trimester ultrasound scan
4. An ultrasound-indicated cerclage is not recommended for funnelling of the cervix (dilatation of the internal os on ultrasound) in the absence of cervical shortening to 25 mm or less. However, studies have demonstrated that funnelling is a function of cervical shortening and does not appear to independently add to the risk of preterm birth associated with cervical length.

Contraindications to cerclage insertion are:

1. active preterm labour
2. clinical evidence of chorioamnionitis
3. continuing vaginal bleeding
4. PPROM
5. evidence of fetal compromise, lethal fetal defect or fetal death
6. Multiple pregnancy
7. Uterine anomaly

Complications - risk of intraoperative bladder damage, cervical trauma , membrane rupture and bleeding during insertion of cervical cerclage, risk of cervical laceration/trauma if there is spontaneous labour with the suture in place, Anaesthetic risk

Pre op Considerations

- Women should be given verbal and written information.
- A written consent should be taken for the procedure.
- Offer first trimester ultrasound scan and screening for aneuploidy before insertion of a history-indicated suture to ensure viability and absence of major fetal defect
- Before ultrasound-indicated or emergency cerclage, ensure an anomaly scan has been performed
- If chorioamnionitis is suspected clinically then perform FBC and CRP , if no clinical signs then emergency cerclage should not be delayed
- Routine genital tract screening should not be undertaken before cerclage.
- If positive culture from a genital swab, antimicrobial therapy should be decided after discussion with the microbiology team

Peri operative considerations

- No evidence to support the use of routine perioperative tocolysis when inserting a suture but this should be considered on an individual basis
- Administration of antibiotics is left at the discretion of the operating consultant
- Suture material should be at the discretion of the operating surgeon(usually mercilene tape)
- The choice of transvaginal cerclage technique (high cervical insertion with bladder mobilization or low cervical insertion) should be at the discretion of the surgeon, but the cerclage should be placed as high as is practically possible

Post Operative Consideration

- Elective transvaginal cerclage can be a day-case procedure
- There is no evidence that either progesterone is more or less effective than cervical cerclage

- Following discharge from the hospital the following are not recommended - routine serial sonographic measurement of the cervix , routine bedrest ,routine fetal fibronectin testing, routine use of progesterone and abstinence from sexual intercourse is not recommended
- Following ultrasound-indicated cerclage to offer timely administration of steroids or in utero transfer

Removal of Cerclage

Suture to be removed between 36⁺¹ and 37⁺⁰ weeks of gestation

If patient is booked for elective caesarean section, then cerclage removal can be done at the same time

Cerclage should be removed in established preterm labour

Shirodkar suture requires anaesthetic before removal

Transabdominal cerclage require birth by caesarean birth, and the suture may be left in place if further pregnancies are contemplated .

PPROM with cervical Cerclage –

PPROM between 24 and 34 weeks of gestation and without evidence of infection or preterm labour, delayed removal of the cerclage for 48 hours can be considered to facilitate in utero transfer.

PPROM before 23 and after 34 weeks of gestation, delayed suture removal is unlikely to be advantageous given the risk of neonatal and/or maternal sepsis and the minimal benefit of 48 hours of latency in pregnancy

Delayed suture removal until labour ensues is not recommended due to risk of maternal and fetal sepsis

Progesterone

Pregesterones have been used in preterm birth prevention and its efficacy data have been extrapolated to be used in cervical insufficiency. This might, however, not be appropriate. A study evaluating the effects of progesterone on cervical length in women considered at risk of preterm birth suggests that vaginal progesterone helps preserve cervical length and thereby reduces the risk of preterm birth.^{16,17, 18} The role of progesterone in mid-trimester loss remains unclear; therefore its routine use is not recommended, and further evaluation is needed.

In Cochrane review, progesterone for women with a past history of spontaneous preterm birth was associated with a statistically significant reduction in the risk of perinatal mortality, preterm birth less than 34 weeks, infant birthweight less than 2500 g, use of assisted ventilation, necrotising enterocolitis, neonatal death, admission to neonatal intensive care unit, preterm birth less than 37 weeks and a statistically significant increase in pregnancy prolongation in weeks. No differential

effects in terms of route of administration, time of commencing therapy and dose of progesterone were observed for the majority of outcomes examined.

In the same Cochrane review, progesterone for women with a short cervix identified on ultrasound was associated with a statistically significant reduction in the risk of preterm birth less than 34 weeks and preterm birth at less than 28 weeks. Vaginal but not systemic progesterone reduces the risk of preterm birth in women with a short cervix in general, but it is not known whether this is specific to women with prior cervical treatment. This reflects the limited evidence of the value of these interventions in women after cervical treatment and our inability to stratify women into low or high risk.

In multiple pregnancies, progesterone was associated with no statistically significant differences for the reported outcomes.

In women who presented in threatened preterm labour, progesterone was associated with a statistically significant reduction in the risk of infant birthweight less than 2500 g.

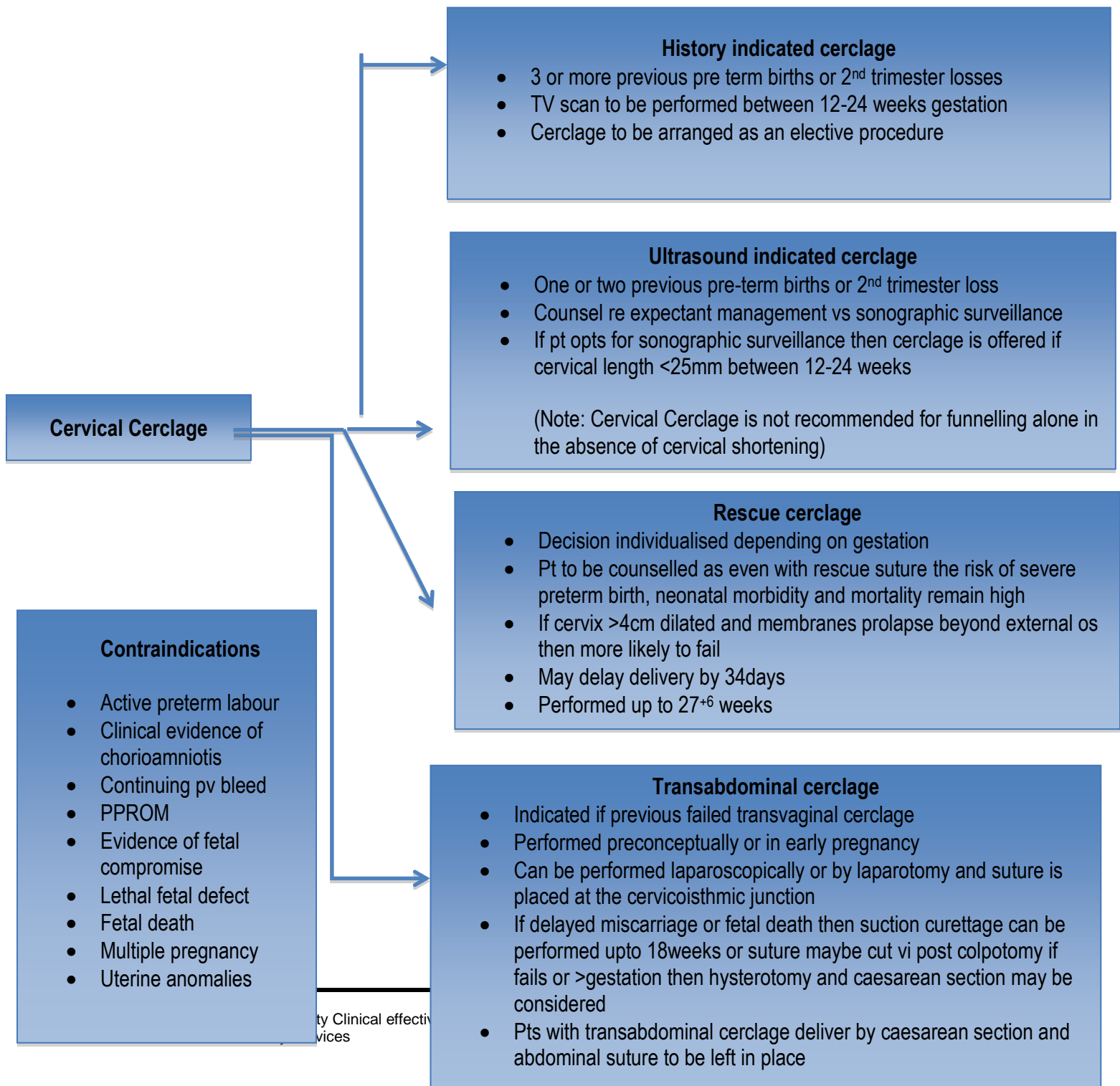
Based on the findings above there are 4 categories of women considered in this guideline:

1. Those with a history of 3 or more spontaneous preterm births or mid-trimester losses between 16+0 – 34+0 weeks of pregnancy.
2. Those with 1-2 spontaneous preterm births or mid-trimester losses between 16+0 – 34+0 weeks of pregnancy.
3. Those with a finding of short cervix on ultrasound but no history of preterm labour or mid-trimester loss but with intermediate or high risk history (LLETZ or uterine anomaly etc)
4. Those who present in threatened preterm labour with painless cervical dilation less than 4 cm.

IT IS RECOMMENDED:

1. For women with a history of 3 or more preterm labours or mid-trimester losses AND cervical length less than 25 mm on TVS which has been carried out between 12+0 – 24+0 weeks - offer cervical cerclage.
2. For women with a history of 1 - 2 preterm labours or mid-trimester losses offer transvaginal ultrasonographic assessments of cervical length between 12- 24 weeks every 2 – 4weeks.
3. For women with a cervical length less than 25 mm on TVS and no history of preterm labour but with intermediate or high risk history , offer cerclage
4. For women with dilated cervix and exposed, unruptured membranes between 16+0 – 27+6 weeks consider 'rescue' cervical cerclage.

Below is the flow-chart summary:



Pre-operative considerations

- Offer a first trimester ultrasound scan and screening for aneuploidy before history indicated to ensure viability and the absence of lethal/major fetal abnormality
- Before rescue cerclage ensure an anomaly scan has been performed recently
- If chorioamnionitis suspected clinically then perform FBC and CRP, if no clinical signs then rescue cerclage should not be delayed
- Routine genital tract screening not recommended, however if swab shows positive culture complete course of antibiotics before insertion of cerclage

Peri-op considerations

- Routine perioperative tocolysis is not recommended
- Peri-op antibiotics - consultant decision
- Suture material operating surgeon preference usually Mercilene tape
- Choice of cerclage (Mac Donalds or Shirodkar's suture) depends on operating surgeon

Post-operative considerations

- History and TVS indicated cerclage should be performed as a day case
- Rescue and TVS indicated cerclage stay in for 24 hours at least post procedure
- Transabdominal cerclage via laparotomy to stay in at least 48 hours
- Bed rest not recommended
- Abstinence from sexual intercourse not recommended
- Routine cervical ultrasonographic surveillance after the procedure not recommended
- Routine fetal fibronectin testing not recommended
- Consider early steroids

Removal of Cerclage

- Between 36⁺¹ and 37 weeks
- Removal of Shirodkar's requires anaesthetic
- If patient booked for elective caesarean section then cerclage removal can be done same time
- Transabdominal cerclage can be left in place after the caesarean section
- If PPRM and patient not in active labour and no evidence of infection then cerclage removal can be delayed for 24 hours to allow time for steroids
- Delayed suture removal until labour is not recommended in PPRM due to risk of maternal and fetal sepsis

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