Brighton and Sussex University Hospitals NHS Trust

Cervical Cerclage (Cervical Suture)

Maternity Protocol: MP077

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Guideline Reviewer:	Tony Kelly
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Contents

Key Principles

A protocol is a set of measurable, objective standards to determine a course of action. Professional judgement may be used in the application of a protocol.

Scope

This guideline applies to all midwives and doctors

Responsibilities

Midwives & Obstetricians:

- To access, read, understand and follow this guidance
- To use their professional judgment in application of this protocol

Management Team

- To ensure the protocol is reviewed as required in line with Trust and National recommendations
- To ensure the protocol is accessible to all relevant staff
- To ensure the protocol is available to service users on request

Introduction

The terms cerclage and suture are inter-changeable
Cervical sutures have been used in the management of women who are high risk of mid-trimesters losses and premature labour often with little evidence-base. This protocol is based on the RCOG Green-top guideline (No 60, May 2011) and the more recent Preterm Labour and Birth guideline (NICE Guideline 25, November 2015) and reflects the current evidence base for this procedure. This protocol also includes local information about the service provided at BSUH.

Prematurity is the leading cause of perinatal death and disability. Although preterm birth is defined as delivery before completed 37 weeks, the majority of preterm-related adverse outcomes relate to delivery before 33 weeks of gestation. Mortality increases from 2% for infants born at 32 weeks of gestation to more than 90% for those born at 23 weeks.

1.0 Types of Cervical Sutures

1.1 History indicated
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 delivery. A history-indicated suture is performed as a prophylactic measure in asymptomatic women and normally inserted electively at 12–14 weeks of gestation.

1.2 USS indicated
Insertion of a cerclage as a therapeutic measure in cases of cervical length shortening seen on transvaginal ultrasound. 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.

1.3 Rescue suture
Insertion of cerclage as a salvage measure in the case of premature cervical dilatation with exposed fetal membranes in the vagina. 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'.

2.0 Other Terminology

2.1 Trans-Vaginal (MacDonald) suture
A transvaginal suture purse-string placed at the cervicovaginal junction, without bladder mobilisation.

2.2 High Trans-vaginal (Shirodkar) suture

A transvaginal suture purse-string placed at the cervicovaginal junction, with bladder mobilisation to allow the suture to be inserted above the level of the cardinal ligaments.

2.3 Transabdominal suture

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

2.4 Occlusion sutures

Sutures placed at the external os aiming to close the external os and retain the mucus plug.

3.0 Referral to Hospital Antenatal Clinic:

3.1 Referral from community midwives to Consultant ANC based on the following risk factors:

3.1.1 **Cf Booking checklist**

- *See Maternity Protocol MP001 Provision and schedule of Antenatal Care*
- All women with 2+ previous preterm births or preterm premature rupture of the membranes and delivery before 35 weeks
- All women with a 2nd trimester losses or second trimester termination of pregnancy
- All women who have had a previous elective or emergency suture
- All women with a history of multiple episodes of cervical surgery (LLETZ) or a single knife cone biopsy

3.2 Women that have had a cervical suture inserted in a previous pregnancy should be referred to a consultant antenatal clinic before 12 weeks in any subsequent pregnancy to discuss whether a repeat cervical suture is indicated.

3.3 Review by Consultant in Clinic

The full history of previous labours should be reviewed and a decision made whether an elective history indicated suture is indicated.

3.3.1 Main indications:

- RCOG states: Suture to be inserted if 3+ previous preterm births and /or 2nd trimester losses (RCOG)
- Previous history indicated suture

3.4 Where possible/preferred women should be referred to the preterm labour clinic for counselling and assessment. Referrals in relation to the need for cervical suture insertion can be made using the criteria in above.

3.5 Definition of preterm delivery is less than 37 weeks. RCOG states that there isn't enough evidence to state whether characteristics of the previous loss such as painless dilation of the cervix indicates a need for elective suture. For the purposes of assessment of risk referral is only indicated for women who have delivered previously below 35 weeks of pregnancy.

3.6 The decision is an individualised decision made by the consultant. It may result in insertion of a history related suture, USS screening of cervical length.

3.7 Contra-indication to all types of suture insertion:

3.6.1 Active pre-term labour
3.6.2 Clinical evidence of chorioamnionitis
3.6.3 Continuing vaginal bleeding
3.6.4 PPROM
3.6.5 Evidence of fetal compromise
3.6.6 Lethal fetal defect
3.6.7 Fetal death

4.0 Counselling Before All Types of Suture Insertion

4.1 RCOG states that cervical suture insertion is not associated with an increased premature delivery rate, mid- trimester losses, PPROM, induction of labour or Caesarean section.

4.2 BSUH audit (small numbers) showed that one third of patients with an elective cervical suture delivered at less than 37 weeks, but on average, eight out of ten women delivered after 34 weeks gestation; the majority of women delivered at 39 weeks.

4.3 There is a small risk of bleeding during the procedure and in the BSUH audit three out of ten of women experienced bleeding, but the majority only have minimal bleeding on the day of suture insertion.

4.4 There is a small risk of bladder damage, cervical trauma and membrane rupture during the procedure (less than 1%).

4.5 There is a doubling of the risk of pyrexia with a cervical suture but no evidence of chorioamnionitis.

4.6 Women should be counselled regarding these risks and these should be documented clearly in the maternal notes prior to insertion.

4.7 The suture is removed before labour at 37 weeks gestation (see section below on suture removal).

5.0 Pre-Operative Management of all Types of Sutures:

5.1 Women should have been offered a first-trimester ultrasound scan and screening for aneuploidy before suture insertion, to ensure viability and absence of lethal/major fetal abnormality.

5.2 Women offered a rescue suture should have had an anomaly scan.

5.3 There is no indication to routinely do a WBC or CRP before insertion.

5.4 There is insufficient evidence to offer amnio-reduction prior to rescue suture insertion.

5.5 There is insufficient evidence to routinely consider amniocentesis to diagnosis intra-amniotic infection.

5.6 RCOG guidelines say there is an absence of data to support GU tract screening before insertion of suture, but if positive culture, a course of antibiotics before suture insertion is recommended.

5.7 RCOG does not consider whether a MSU should be performed prior to insertion.

6.0 Operative Issues

6.1 There is no evidence to support the use of routine perioperative tocolysis in women undergoing suture insertion.

6.2 Antibiotic prophylaxis at time of suture insertion should be at the discretion of the operating team. Anaesthesia: most commonly regional anaesthesia is used, but the decision is at the discretion of the operating team.

7.0 Post Suture Insertion

7.1 Bed rest and abstinence from sexual intercourse is not recommended following suture insertion.

7.2 Serial sonographic surveillance of cervical length post suture insertion is not recommended.

7.3 Elective suture can be safely performed as a day case procedure. If a transabdominal suture was inserted, the woman should have an inpatient stay of at least 48 hours.

8.0 Suture Removal

8.1 A transvaginal suture should be removed before labour, usually between 36+0 and 37+6 weeks gestation. This can be removed without anaesthesia on the labour ward. If the woman is presenting in established preterm labour, the suture should be removed to minimize potential trauma to the cervix.

8.2 If delivery is by elective caesarean section, suture removal should be delayed until this time.

8.3 Removal of Shirodkar suture requires anaesthesia for removal.

8.4 All women with a transabdominal suture require delivery by caesarean section. The abdominal suture can be left in place following delivery; discussion of this should be carried out before caesarean section.

9.0 PPROM and Sutures

9.1 In women with PPRoM between 24 and 34 weeks gestation without evidence of infection or preterm labour, delayed removal of suture for 48 hours can be considered. This may result in sufficient latency that a course of prophylactic steroids for fetal lung maturation is completed.

9.2 The decision about removal of suture must be made by a Consultant and the timing of removal maybe influenced by the gestation of the pregnancy in the absence of any signs of infection.

9.3 *See Maternity Protocol* MP031 Pre-term Labour

9.4 In women with PPRoM and evidence of preterm labour, suture removal should not be delayed as there is an increased risk of maternal/fetal sepsis.

9.5 If there are signs of chorioamnionitis the suture must be removed immediately.

10.0 Documentation

10.1 All information given, discussions and choices offered must be clearly documented, by the person giving it, in the maternal hand held notes (with signature and printed name and designation).

10.2 Operation notes, consent form and anaesthesia notes should be clearly documented in the antenatal notes.

11.0 Consent

Verbal consent should be documented in the maternity hand held notes.

12.0 History Indicated Suture

12.1 Elective suture should be inserted between 12-14 weeks gestation (RCOG guidelines).

12.2 Sutures should be inserted transvaginally, using either the MacDonald or Shirodkar suture, at the discretion of the Obstetrician.

12.3 If the woman has had extensive cervical surgery or previous insertion of transvaginal suture which has failed, they should be considered for a transabdominal suture, either laparoscopically or by laparotomy.

13.0 Ultrasound Screening of Cervical Length

13.1 This service is currently offered through the Preterm Labour Clinic.

13.2 Ultrasound screening from 12 weeks onwards is indicated for the following groups of women and cervical suture insertion considered if the cervical length falls below 25mm.

- Women with a history of a previous cervical suture in a previous pregnancy who do not wish to have an elective suture in the index pregnancy
- Women with a history of a previous rescue suture but with no additional risk factors
- History of cervical insufficiency (i.e. evidence of preterm delivery with painless cervical dilatation: this requires detailed examination of previous history)
- History of major cervical surgery (i.e. >10mm removed, repeat procedure, Cone Biopsy under general anaesthetic)
- History of multiple procedures to the cervix (2 or more LLETZ procedures)
- Short cervix this pregnancy (<25mm)

13.3 Women with a history of one or more premature deliveries or mid-trimester losses who are undergoing a transvaginal sonographic surveillance should be offered an ultrasound indicated suture insertion if the cervix is 25mm or less.

13.4 Suture insertion is not offered for funnelling of the cervix in the absence of a short cervix of 25mm or less.

13.5 Other risk factors:

13.5.1 There is no evidence to support routine insertion of suture nor transvaginal sonographic surveillance in multiple pregnancies or uterine abnormalities or LETZ.

13.5.2 In the case of a previous radical trachelectomies the decision must be individualised.

14.0 Rescue Suture

14.1 It is a salvage method in the case of premature dilatation with exposed fetal membranes.

14.2 Each decision must be individualised and made by a Consultant and dependant on gestation.

14.3 If the woman has advanced cervical dilatation (4cm or more) or membranes prolapsed beyond the external os, the suture has a higher chance of failure (RCOG) and confirmed with our audit.

14.4 Rescue cerclage should only be offered between 16+0 and 27+6 weeks of pregnancy.

14.5 Do not offer rescue cerclage if any of the following are present:

- Signs of infection
- Active bleeding or
- Uterine contractions

14.6 Insertion of the suture maybe associated with a prolongation of 5 weeks (RCOG), our audit showed a prolongation of 4 weeks, but most delivering at 24 weeks. Only one in ten births was after 37 weeks.

14.7 There is no data about a latency period between presentation and insertion of suture. The RCOG calls for immediate insertion however our audit suggested a better long term outcome if inserted after 48 hours. This maybe that the ones who delivered very quickly after presentation and insertion were more likely to have infection and be in labour.

15.0 References

1. Royal College of Obstetricians and Gynaecologists. Cervical cerclage. Green top guideline No.60. London: RCOG; 2011
2. Drakeley A, Roberts D, Alfirevic Z. Cervical stitch (cerclage) for preventing pregnancy loss in women (Review). The Cochrane Library, Issue 2, 2010. Chichester, UK: John Wiley & Sons, Ltd.
3. NICE. Preterm Labour & Birth. NICE Guideline 25. November 2015.

Appendix A: Patient Information Leaflet

Health & care information you can trust
The Information Standard Certified Member

Royal College of Obstetricians & Gynaecologists

Information for you

Published in October 2014 (next review date: 2017)

Cervical suture

About this information

This information is for you if you want to know about cervical suture. You may find it helpful if in the past you have had a baby born prematurely or have had late miscarriages. You may also find it helpful if you are a partner, relative or friend of someone who has been in this situation.

What is a cervical suture?

A cervical suture is an operation where a suture (stitch) is placed around the cervix (neck of the womb). It is also sometimes known as cervical cerclage. It is usually done at between 12 and 24 weeks of pregnancy.

Why is it done?

A cervical suture is sometimes recommended for women who are thought to have a high chance of a late miscarriage or of going into premature labour.

The purpose of the suture is to reduce the risk of your baby being born early. Premature babies have an increased risk of short- and long-term health problems. You can find out more about this from the RCOG patient information *Premature labour: information for you*, which is available at: www.rcog.org.uk/womens-health/clinical-guidance/premature-labour-0.

The exact cause of premature labour or late miscarriages is not clear, but they may be caused by changes in the cervix such as shortening and opening. A cervical suture helps to keep the cervix long and closed, thereby reducing the risk of premature birth or late miscarriage.

When might a cervical suture be advised?

Having a premature birth or late miscarriage can be devastating for parents and you are likely to be worried about a future pregnancy. If this has happened to you, you can be referred to a specialist who will talk to you about plans for a future pregnancy. Depending on your situation, a cervical suture may be recommended for your next pregnancy.

You may be in one of the following situations:

- If you have had one or two late miscarriages or premature births (before 34 weeks), you may be offered ultrasound scans between 14 and 24 weeks of pregnancy to measure the length of your cervix. If the scans show that it has shortened to less than 25 mm, you may be advised to have a cervical suture.
- If you have suffered three or more late miscarriages or three or more premature births you may be advised to have a cervical suture inserted at about 12–14 weeks of pregnancy.

During pregnancy it is sometimes noticed during a vaginal examination or a routine scan that the cervix has started to open up. Depending on your circumstances, you may be offered a suture called a **rescue suture**. If you are in this situation, a senior obstetrician will discuss with you the risks and benefits of having a rescue suture.

Are there situations when a cervical suture would not be advised?

Sometimes a cervical suture is not advised. It would not normally improve the outcome for your baby/ babies and may carry risks to you in the following circumstances:

- you are more than 24 weeks pregnant
- you are carrying twins or triplets
- your womb is an abnormal shape
- an ultrasound scan done for another reason happens to show that you have a short cervix
- you have had treatment to the cervix for an abnormal smear.

If a suture is not the right option for you, you will still be closely monitored. This may include regular vaginal ultrasound scans to measure the length of your cervix until 24 weeks of pregnancy. If the cervix is shortened, you may be offered corticosteroid injections after 23 weeks to increase the chance of your baby surviving if born early. You can find out more about this from the RCOG patient information *Corticosteroids in pregnancy to reduce complications from being born prematurely: information for you*, which is available at: www.rcog.org.uk/womens-health/clinical-guidance/corticosteroids.

Are there situations when a cervical suture would not be put in?

Yes. A cervical suture would not be put in if:

- you are already in labour or your waters have broken
- you have signs of infection in your womb
- you have vaginal bleeding
- there are concerns about your baby's wellbeing.

How will the cervical suture be put in?

Insertion of the suture takes place in an operating theatre. You may have a spinal anaesthetic where you will stay awake but will be numb from the waist down or you may be given a general anaesthetic where you will be asleep. Your team will advise which would be the best option for you.

You will be advised not to eat or drink for 4–6 hours before the operation. In the operating theatre, your legs will be put in supports and sterile covers will be used to keep the operating area clean. The doctor will then insert a speculum (a plastic or metal instrument used to separate the walls of the vagina to show or reach the cervix) into the vagina and put the suture around the cervix. The operation should take less than 30 minutes.

Afterwards, you may be given antibiotics to help prevent infection and you will be offered medication to ease any discomfort. You may also have a tube (catheter) inserted into your bladder that will be removed once the anaesthetic has worn off.

You are likely to be able to go home the same day although you may be advised to stay in hospital longer.

Are there any risks?

There is a small risk that your bladder or cervix may be damaged at the time of the operation. Rarely, your membranes may be ruptured. The risk of complications is higher if you have a rescue suture and this will be discussed with you before the operation.

A planned cervical suture does not increase your risk of infection, miscarriage, or premature labour. It does not increase your risk of having to be started off in labour (be induced) or needing a caesarean section.

What might I expect afterwards?

After the operation, you will usually have some bleeding from the vagina, which should change to brown in colour after a day or two. You may have a rise in temperature that should settle without treatment.

Once you recover from the operation, you can carry on as normal for the rest of your pregnancy. Resting in bed is not normally recommended. Sexual intercourse may be continued when you feel comfortable to do so. Your doctor can advise you about the activities you can do and those best avoided during the first few days after the procedure.

Is there anything I should look out for?

If you experience any of the following symptoms, you should contact your maternity unit:

- contractions or cramping
- vaginal bleeding
- your waters breaking
- smelly vaginal discharge.

How and when will the suture be taken out?

Your suture will be taken out at the hospital. This will normally happen at around 36–37 weeks of pregnancy, unless you go into labour before then.

You will not normally need an anaesthetic. A speculum is inserted into your vagina and the suture is cut and removed. It usually takes just a few minutes.

You may have a small amount of bleeding afterwards. Any red bleeding should settle within 24 hours but you may have a brown discharge for longer. If you have any concerns, tell your midwife or doctor.

If you go into labour with the cervical suture in place, it is very important to have it removed promptly to prevent damage to your cervix. If you think you are in labour, contact your maternity unit straight away.

If your waters break early but you are not in labour, the stitch will usually be removed because of the increased risk of infection. The timing of this will be decided by the team looking after you.

Are cervical sutures sometimes inserted through the abdomen?

Yes, if a vaginal cervical suture has not worked in the past or it is not possible to insert a vaginal suture. This would involve an operation through your abdomen and is called a 'transabdominal cerclage'. It is done

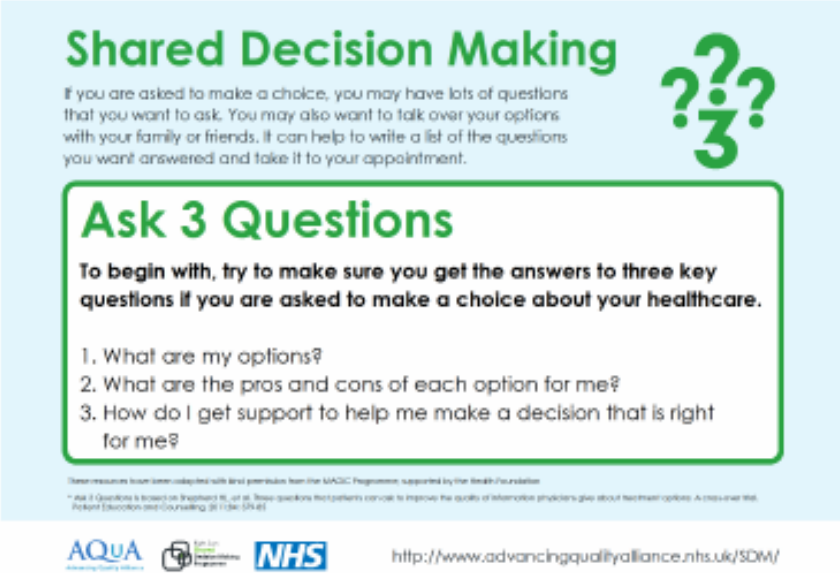
either before you become pregnant again or in early pregnancy. Such a suture is not removed and your baby would be born by caesarean section.

What to do if I have concerns or further questions

Talk to your doctor who should be able to help. You can also ask to be referred to a specialist if you have further questions or concerns.

Further information aimed at healthcare professionals is also available in the RCOG Green-top Guideline No. 60, *Cervical Cerclage*, which is available at: www.rcog.org.uk/womens-health/clinical-guidance/cervical-cerclage-green-top-60.

Making a choice



Sources and acknowledgements

This information has been developed by the RCOG Patient Information Committee. It is based on the RCOG Green-top Guideline No. 60, *Cervical Cerclage*, which is available at: www.rcog.org.uk/womens-health/clinical-guidance/cervical-cerclage-green-top-60.

The RCOG produces guidelines as an educational aid to good clinical practice. They present recognised methods and techniques of clinical practice, based on published evidence, for consideration by obstetricians and gynaecologists and other relevant health professionals. This means that RCOG guidelines are unlike protocols or guidelines issued by employers, as they are not intended to be prescriptive directions defining a single course of management.

This leaflet was reviewed before publication by women attending clinics in Liverpool, London and Newcastle.

A glossary of all medical terms is available on the RCOG website at: www.rcog.org.uk/womens-health/patient-information/medical-terms-explained.

A final note

The Royal College of Obstetricians and Gynaecologists produces patient information for the public. The ultimate judgement regarding a particular clinical procedure or treatment plan must be made by the doctor or other attendant in the light of the clinical data presented and the diagnostic and treatment options available. Departure from the local prescriptive protocols or guidelines should be fully documented in the patient's case notes at the time the relevant decision is taken.

All RCOG guidelines are subject to review and both minor and major amendments on an ongoing basis. Please always visit www.rcog.org.uk for the most up-to-date version of this guideline.