

The shortened cervix in pregnancy

Investigation and current management recommendations for primary caregivers

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Background

Preterm birth (PTB), defined as delivery before 37 weeks' gestation, is a multifactorial condition that can lead to neonatal mortality and morbidity. Short cervical length (CL) found on morphological scan is associated with an elevated risk of spontaneous PTB. Identifying these women at risk allows clinicians the opportunity to treat and prevent PTB.

Objectives

This article reviews current approaches to the evaluation and management of a shortened CL at morphology scan and highlights important patient counselling points.

Discussion

Current Royal Australian and New Zealand College of Obstetricians and Gynaecologists guidelines provide consensus-based recommendations; a shortened cervix measuring less than 25 mm on a transvaginal ultrasound scan at 18–24 weeks' gestation requires management. There are three management pathways when a short cervix is identified on morphology scan: conservative, medical and surgical. General practitioners involved in the antenatal care of pregnant women may assist in counselling these women about their options.

PRETERM BIRTH (PTB) is the leading cause of newborn death and is therefore recognised as an important worldwide health problem.¹

In Australia, the rate of PTB has not changed over 20 years, with approximately 16,000 babies born preterm annually (6–7% of pregnancies).² A history of PTB is a risk factor for recurrent PTB; however, the majority of spontaneous PTBs occur in primiparous women. Preterm infants, especially the very preterm, face higher rates of morbidity, including respiratory distress syndrome and chronic lung disease, intraventricular haemorrhage, necrotising enterocolitis, sepsis, cerebral palsy and behavioural problems in childhood.³

Short cervical length (CL) is associated with an elevated risk of spontaneous PTB. Identifying women at risk of PTB may allow opportunities for treatment to reduce that risk.^{4,5}

Routine CL screening

The mid-trimester morphology ultrasound is a routine component of antenatal care around the world and offers an opportunity to perform a measurement of CL.

Detection of a short cervix in the mid-trimester by transvaginal ultrasound is a powerful predictor of spontaneous PTB.^{6,7} Transvaginal ultrasound has been shown to be the gold standard for measuring CL. Table 1 makes a

comparison of the transvaginal ultrasound (TV US) to the transabdominal ultrasound (TA US).⁸

The Australian Society of Ultrasound Medicine recommends measurement of CL to be included in all mid-trimester morphology scans.⁹ However, practical application of universal screening in Australia varies on the basis of ultrasound education, training and available resources. General practitioners (GPs) must consider availability of CL screening in their local health service when specifying for this test.

Management recommendations

A shortened cervix on morphology scan should prompt a multidisciplinary management strategy that includes participation of the GP, obstetrician, neonatologist and ultrasound imaging specialist.

All women should be referred to an appropriate high-risk antenatal clinic where an individualised management plan can be developed. GPs are well placed to provide care and coordination, as well as to have a monitoring role, for the management of a shortened cervix.

Conservative

In women that have a CL of 20–25 mm, clinicians can offer cervical surveillance that includes a repeat transvaginal

ultrasound in 1–2 weeks. If during surveillance the cervix continues to shorten, commencing vaginal progesterone or rescue cervical cerclage should be considered, as described below. There is no clinical benefit in ongoing surveillance of CL after 26 weeks' gestation.

Medical: Progesterone

There has been a growing body of evidence supporting the benefit of vaginal progesterone for shortened cervix in an otherwise low-risk pregnancy.

If CL is <20 mm, vaginal progesterone pessaries should be started, as multiple randomised control trials have shown a significant risk reduction of PTB and improved neonatal outcomes.^{10,11} If a woman at low risk is found to have a CL of 20–25 mm, it is appropriate to suggest either cervical surveillance or vaginal progesterone.

Vaginal progesterone pessaries are safe to use for both mother and fetus and have few systemic side effects (which can include dizziness, headache and vaginal itch). The optimal dosage is not yet established and ranges 90–200 mg daily; however, current Australian practice is to commence 200 mg vaginal progesterone nocte until 37 weeks' gestation.¹² Ongoing cervical surveillance is still required for this subset of women until viability is reached.

Surgical: Cervical cerclage

Cervical cerclage involves a procedure that uses a non-absorbable suture to mechanically support the cervix. Elective cervical cerclage should be considered for women at high risk. These risk factors are outlined in Box 1. When undertaken before 23 weeks' gestation, cervical cerclage is associated with a risk reduction in PTBs in women at high risk. There is no evidence that cervical cerclage in women in whom the diagnosis of a short cervix is an incidental finding improves pregnancy outcome, therefore cervical cerclage is generally not recommended for these women.^{13,14} However, there are some individual case considerations for cervical cerclage if initial CL is <10 mm.

Rescue cerclage is considered in the setting of a woman presenting with pre-viability cervical dilation or if, during ultrasound surveillance, a cervix continues to shorten despite progesterone.

Key points

- CL should be confirmed using a standardised technique, with the TV US being the current gold standard.
- A multidisciplinary team approach should be initiated, with involvement of an obstetrician and neonatologist to discuss risks of PTB if the patient is found to have a short cervix.

- Repeat TV US in 1–2 weeks, or consider commencement of progesterone for a CL of 20–25 mm.
- Progesterone should be offered for prevention of PTB in women at low risk if CL is <20 mm at 18–22 weeks.
- For women deemed to be high risk, cervical cerclage should be considered if there is cervical dilatation pre-viability or if the cervix continues to shorten during surveillance.
- Progesterone is generally the preferred treatment because of the lower risk of surgical complications.

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Table 1. Comparison of transvaginal and transabdominal ultrasound

	Transvaginal ultrasound (TV US)	Transabdominal ultrasound (TA US)
Advantages	Safe and well tolerated Unaffected by maternal obesity, cervical position and shadowing of fetal part High reproducibility, therefore a superior screening tool	Cervical length >35 mm on TA US is sufficient to exclude a short cervix, reducing the need for TV US
Disadvantages	More invasive testing than TA US	Cervix may not be adequately visualised If <35 mm on TA US, a TV US should be performed

Box 1. Risk factors for preterm birth

Previous history of preterm birth

Previous surgery to the cervix (cone biopsy and large loop excision of the transformation zone)

Congenital uterine malformations:

- bicornuate uterus
- septate uterus
- uterus didelphys

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