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Case Report

## Successful Vaginal Delivery following an Abdominal Cerclage Removal in Pre-Term Labour

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### Abstract

Case study of a woman who went into spontaneous preterm labour with a trans-abdominal cerclage (TAC) in situ at 33 weeks' gestation. In view of a risk of uterine rupture, she was taken to theatre for examination under anaesthesia ± caesarean section. Under spinal analgesia the TAC sutures were palpable on VE, having pulled through the now soft and shortened posterior wall of the cervix. They were therefore cut and removed vaginally. She went on to have a vaginal delivery of a healthy female infant. There are no published cases of women who have had their TAC removed vaginally, allowing spontaneous vaginal delivery to be achieved. In our experience it is not uncommon that the abdominal cerclage is found within the internal os at the time of scheduled caesarean section. This can occur even when the woman has been asymptomatic. This provides evidence that removal through the internal os is feasible and can prevent the need for caesarean delivery in rare cases. It also supports the need for careful ultrasound assessment prior to future conception, confirming the TAC is still in-tact.

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### Keywords

TAC; Trans-abdominal suture; Trans-abdominal cerclage

### Case Presentation

A 28-year old G2P0+1 was seen in the Prematurity Surveillance Clinic (PSC) at a tertiary inner-city hospital due to her gynaecological history. She had been diagnosed with recurrent CIN III two years previously and underwent two large loop excisions of the transformation zone (LLETZ) under general anaesthesia.

Following this procedure, she became pregnant and a history indicated vaginal cervical cerclage was attempted at 13 weeks'. However, it was found to be impossible because of deficiency in the vaginal portion of her cervix. She was therefore commenced on progesterone pessaries, but unfortunately transvaginal ultrasound scan (TV USS) confirmed vaginal shortening and the patient had a late miscarriage at 19 weeks' gestation.

In view of her obstetric history and inability to perform a vaginal cervical suture, following the late miscarriage, Ms LB underwent a pre-conception trans-abdominal cerclage (TAC) via laparotomy.

Once pregnant with the TAC in situ, Ms LB attended the PSC at St Thomas' Hospital for routine two-weekly TV USS surveillance of her cervix, with quantitative fetal fibronectin (qfFN) testing at each visit from 18 weeks'. Her cervical length (CL) and qfFN measurements were stable throughout the surveillance period (27 mm and 10 ng/mL). At 25+5 weeks her qfFN result was 9 ng/mL and therefore her QUIPP app score was calculated to be 0.4% risk of delivery within 1 week, 0.9% risk of delivery within 2 weeks and 2.5% risk of delivery within 4 weeks [1]. On

this basis she was discharged from surveillance, returned to routine antenatal care and an elective caesarean section was booked for 38 weeks gestation (as per hospital TAC protocol). A final TV USS was arranged for 34 weeks', to ensure the TAC was still in situ.

At 33+2 weeks gestation Ms LB underwent in-utero transfer from her local hospital to our specialised tertiary inner-city hospital, with irregular contractions and light vaginal bleeding. On admission speculum examination confirmed the os to appear soft, but closed, with fresh blood-stained discharge noted, making a potential fFN swab result invalid. Fetal membranes were intact and maternal observations and fetal heart rate were confirmed within normal range. Ms LB had been started on oral antibiotics for a presumed urinary tract infection by her local hospital, which were continued. Nifedipine tocolysis and a course of Dexamethasone was commenced.

The next day the second dose of Dexamethasone was given. Cephalic presentation was confirmed, with the patient reporting irregular tightenings. Cervical length on TV USS was 10 mm and vaginal examination (VE) confirmed a soft cervix, found to be 1 cm-2 cm dilated. In view of a risk of uterine rupture, she was taken to theatre for examination under anaesthesia ± caesarean section.

Under spinal analgesia the monofilament TAC sutures were palpable on VE, having pulled through the now soft and shortened posterior wall of the cervix. They were therefore cut and removed vaginally. Once removed, VE confirmed Ms LB to

be 2-3cm dilated with bulging membranes, presenting part at station -3.

Ms LB remained under observation as an inpatient in view of her regular uterine contractions. Five days after being admitted, at 34 weeks, she had spontaneous rupture of membranes (SROM). She showed no signs of infection and by this time her contractions had settled.

Nine days after being admitted (34+4/40) she went into established labour and progressed to full dilation quickly. After a delayed second stage and IV oxytocin augmentation, she had a vaginal delivery of a female infant. Her baby girl was born at 34+4 weeks' gestation with APGAR scores of 9 at 1 minute and 10 at 5 minutes. Four days after delivery Ms LB was discharged home with her daughter.

### Discussion

TAC is recommend in women where a vaginal cervical suture has failed [2]. It is also used in cases where a vaginal cervical suture is technically impossible [3]. A suture is placed above the cardinal and uterosacral ligaments [3,4] via laparotomy, or laparoscopically.

Women who go into preterm labour with a TAC need quick clinical decisions on whether to attempt tocolysis, observe for signs of progressing labour, or proceed to caesarean section [5]. In cases of established preterm labour a caesarean section needs to be performed or the TAC needs to be removed to prevent uterine rupture [6].

There is one published case of women's TAC becoming displaced and going on to successful vaginal delivery [7]. However, there are no published cases of women who have had their TAC removed vaginally, allowing spontaneous vaginal delivery to be achieved. In our experience it is not uncommon that the abdominal cerclage is found within the internal os at the time of scheduled caesarean section. This can occur even when the woman has been asymptomatic. This provides evidence that removal through the internal os is feasible and can prevent the need for caesarean delivery in rare cases. It also supports the need for careful ultrasound assessment prior to future conception, confirming the TAC is still intact.

The management of this delivery means the patient did not require a caesarean section or laparotomy to remove her TAC suture, reducing associated morbidity. A reduction in the number of repeat abdominal procedures is especially important if this woman wishes to have another pregnancy, as expert recommendation would advise a replacement TAC should be placed pre-conception.

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