Vaginal delivery after surgical treatment for stress incontinence using transobturator tape: a case report

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Case report

A 36-year-old woman presented at the one-stop urodynamic clinic with a 12-month history of urinary stress incontinence. She had no other urinary symptoms or history of urinary tract infection. She had a 17-month-old daughter delivered by spontaneous vaginal delivery. Stress incontinence occurred soon after her first delivery. She was single and had no plans for a second child.

On clinical examination, the woman was found to have a normal abdomen and pelvis. Urodynamic assessment showed moderate urodynamic stress incontinence, with a stable normal capacity bladder and no voiding dysfunction.

This woman was offered a transobturator tape (TOT) (Advantage Mid-Urethral Sling; Boston Scientific, St Albans, UK) as a surgical option for treatment, with preoperative physiotherapy. The operative details, together with risks and complications, were described, and a handout leaflet was given describing the operation.

The woman decided to opt for conservative treatment initially while she thought matters were over. She was referred to the continence care clinic where she was examined and assessed for bladder re-education and pelvic floor muscle strength and tone. She was given a pelvic floor educator and instruction on pelvic floor exercises and fluid intake.

Four months later, she requested surgery, and a TOT procedure was performed. Her last menstrual period was noted to be 2 weeks before. The urinary pregnancy test performed on admission was negative.

A TOT (Boston Scientific) was inserted under general anaesthesia using a 1–2 cm midurethral incision in the anterior vaginal wall and an incision on each upper thigh over the obturator fossa, on a line levelling the clitoris. The polypropylene tape was placed loosely to form a suburethral hammock. The woman was returned from theatre without a urethral catheter. She voided normally, with residual volumes of less than 100 ml, noted on bladder scanning. She was discharged home on the second postoperative day.

Two weeks later, the woman telephoned the hospital seeking advice after having a positive home pregnancy test and was given an appointment for the one-stop urodynamic clinic. An ultrasound scan showed a gestational sac of 5 weeks. Comprehensive counselling was provided by the urogynaecologist and the consultant anaesthetist involved with her case. She decided to continue with the unplanned pregnancy.

Repeat ultrasound scan 4 weeks later confirmed a viable intrauterine pregnancy of 9 weeks of gestation. The woman’s GP was contacted and she was referred for antenatal booking at her local hospital, with written information to the obstetrician concerning her recent surgery.

The woman’s antenatal progress was entirely uneventful. Serial urinalysis was negative for protein and bacterial culture. There was no stress incontinence antenatally. There was good communication between the obstetric unit and the one-stop urodynamic clinic during the antenatal period. There was a detailed discussion about the mode of delivery, and the woman decided that she would prefer vaginal delivery if possible.

Spontaneous vaginal delivery occurred at 39 weeks of gestation. She was in labour in hospital for 75 minutes, with 10 minutes in the second stage. The baby weighed 3018 g and was normal. The woman required two sutures to the perineum for a first-degree tear.

She was seen at 4 weeks postnatal in the one-stop urodynamic clinic. She had resumed normal voiding immediately after delivery and reported no stress incontinence on any occasion. Vaginal examination revealed that the tape was well placed, as previously, with no tightening or erosion.
The woman was seen again at 8 weeks postnatal. She had resumed normal menstruation but was still not using contraception. Urodynamic assessment showed a stable bladder with normal capacity, no urodynamic stress incontinence, normal voiding pressures and very little change from pre-delivery urodynamic testing.

**Discussion**

Women tend to have stress incontinence during pregnancy. It is increasingly common these days having children later in life, to find women with urinary incontinence who are planning future childbirth. Some physicians are reluctant to offer surgical correction of stress incontinence if women plan to have more children. There are few published reports on pregnancy and delivery following incontinence surgery. Consequently, there are no published guidelines about the timing and management of pregnancy in these circumstances. Practice is guided by individual experience or intuition and increasingly by opinion and choice of the woman. We believe this to be the first case report on pregnancy and vaginal delivery after a TOT.

TOT is a ‘tension-free’, suburethral, polypropylene sling inserted below the midurethra. The position of the trans-obturator tape is similar to that of the natural hammock supporting the urethra, as described by de Lancey. The tape is brought out through the obturator foramen to the level of the skin inside the upper thigh. This type of sling seems to improve urethral support and prevents further descent of the midurethra. Research published by de Leval suggest that the tape may effectively restore the median perineal aponeurosis underdeveloped in women and that may be altered by pregnancy or delivery. Thus, unless the woman has a traumatic or an instrumental delivery in the second stage of labour, there should be no reason why there should be disruption of the tape.

Very few pregnancies have been reported subsequent to surgical treatment for incontinence. In a 10-year analysis of pregnancy complicated by prior incontinence surgery reported by Casper et al., a total of four women were identified, two having had a prior Burch procedure and two with a prior Marshal Marchetti–Krantz procedure. All four women delivered by caesarean section before the onset of labour. There has been a similar report on pregnancy after a Burch colposuspension procedure and the woman delivered by scheduled caesarean section. There are two case reports on pregnancy following transvaginal tape (TVT). In both cases, the pregnancy occurred 3 and 6 months, respectively, after tape insertion and caesarean section was suggested as the method of delivery. There have been no reports on pregnancy following TOT insertion. This case report presents that the tape insertion occurred around conception, with no untoward incident and vaginal delivery was uncomplicated.

Until more evidence accumulates, this case report and the case reported by Seeger et al., in which the woman delivered vaginally after TVT, may encourage vaginal delivery in women with suburethral sling procedures. There is no sound evidence for promoting caesarean section over vaginal delivery as the optimum method of delivery. Glazener et al. found that mode of delivery and older maternal age significantly affected the chance of developing incontinence after delivery. Women were more likely to be dry after caesarean section, with only 6% suffering from incontinence, whereas 18–22% having vaginal births became incontinent.

An assessment of continence should preferably be made in the third trimester. If the woman prefers vaginal delivery, the duration of labour and the size of infant should be taken into account previously. If an easy vaginal birth is expected, from the outcome of this case report, there is no reason to disallow it. Primigravidae pose a more complicated problem as it may be difficult to predict their birth outcome. Instrumental delivery is probably contraindicated in cases of treated incontinence, but we acknowledge that there is no evidence for this as yet.

It may be prudent to monitor pregnant women who have undergone previous suburethral sling procedures carefully throughout pregnancy for urinary tract infections, owing to the potential for urethral obstruction and urinary retention.

Unfortunately, it is unlikely that any one practitioner will have enough experience with this clinical problem to draw a definitive conclusion. However, it is likely in the future that more young women will demand treatment prior to completion of childbearing, and as transobturator and TVTs give such excellent cure rates, it is likely that more vaginal deliveries following insertion of tapes will occur.

**References**