

Uncomplicated Vaginal Delivery Following Midurethral Sling

Christa M. Lewis, DO, Charbel Salamon, MD, and Patrick Culligan, MD

Background: Delivery mode following midurethral sling remains controversial. There are no formal guidelines as to the preferred mode of delivery following midurethral sling.

Case: A 33-year-old gravida 2 para 2 underwent midurethral sling placement 16 months after the delivery of her first child for severe stress urinary incontinence (SUI). She conceived 2 months postprocedure and had an uneventful antepartum course. She remained without any SUI and delivered via uncomplicated spontaneous vaginal delivery at 38 weeks' gestation. One year after her delivery, she was still free of SUI symptoms.

Conclusions: Midurethral sling placement may be a valid treatment option for patients with stress incontinence even if they are contemplating future pregnancies and subsequent vaginal delivery.

Key Words: midurethral sling, pregnancy, vaginal delivery, TVT, TOT

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Midurethral sling placement has been widely accepted as an option for the treatment of genuine female stress urinary incontinence (SUI).¹ It is an extremely effective, minimally invasive procedure with low intraoperative and postoperative morbidity.²

Historically, clinicians reserved midurethral sling procedures for patients who had completed childbearing. More recently, desires for future childbearing have not been considered as a contraindication to treatment. Given the limited research investigating perinatal midurethral sling function or implications of prior midurethral sling on vaginal delivery, there are no formal recommendations for delivery mode for patients who want to receive a midurethral sling before completion of their family.

CASE

A 33-year-old gravida 1 para 1 using oral contraceptive pills for contraception presented 10 months after the delivery of her first child with symptoms of SUI. She was experiencing multiple daily episodes of urinary leakage when coughing, laughing, sneezing, and exercising. She began avoiding exercise secondary to multiple episodes of leakage while jogging, started to decrease her fluid intake to better control her symptoms, and ultimately sought medical consultation with her obstetrician given the significant impact on her quality of life.

As recommended by her gynecologist, she performed pelvic floor strengthening exercises faithfully for 8 weeks but saw little to no improvement in her SUI symptoms. She continued to have multiple daily episodes of leakage that required 3 to 4 pads per day. She desired surgical intervention and was therefore referred to our center for evaluation.

Her obstetric history was unremarkable. She had an uncomplicated vaginal delivery of her first child weighing 3125 g, with second stage of labor lasting 65 minutes. A second-degree perineal laceration was repaired without complication. Upon initial evaluation in our office, her Sandvik Severity Index was 12.³ On physical examination, the patient's pelvic floor muscle strength measured 5 on the Oxford scale of 0 to 5, and she had urethral hypermobility but no pelvic floor defects.

She underwent urodynamic evaluation, which demonstrated SUI with a leak point pressure of 116 cm H₂O without evidence of detrusor overactivity. The patient was counseled extensively regarding her desires for future childbearing and the unknown effect that pregnancy and/or vaginal delivery might have on a midurethral sling. In addition to routine midurethral sling counseling, specific intrapartum and postpartum risks were discussed including possible urinary tract infections, urethral obstruction, urinary retention, laceration of urethra with possible need for surgical correction, and recurrent stress incontinence. After careful consideration of both pregnancy risks and postpartum risks, the patient desired to proceed with surgical intervention in the form of a midurethral sling, and her tentative plan for her next pregnancy was to attempt vaginal delivery.

In September 2008, the patient underwent an uncomplicated midurethral sling placement (Align Retropubic CR Bard, Covington, Ga) under local anesthesia with intravenous sedation. Tensioning was performed with the cough test technique.⁴ Postoperatively, the patient did well and was discharged to home on the day of surgery with routine postoperative instructions including abstinence until her 4-week postoperative visit. On routine 4-week postoperative follow-up, she was doing extremely well with a properly healed vaginal incision. The sling corrected her stress incontinence and did not result in any complications or clinical problems.

Just 2 months after midurethral sling placement, the patient became pregnant with her second child. She was followed closely in our office during her pregnancy, in conjunction with her obstetrician, for any evidence of urinary retention, obstruction, infection, incontinence, irritating bladder symptoms, or pain.

During her antepartum course, she was seen in our office at weeks 5, 12, 25, and 36 and was assessed for any evidence of urinary tract infections, urinary retention, SUI, irritating bladder symptoms, changes in voiding stream, dyspareunia, or pain. Her antepartum course was uneventful from a lower urinary tract perspective. Evaluation was performed with the assistance of patient history, routine urinalysis, postvoid residuals, and a thorough physical examination.

At various points during her pregnancy, she was counseled regarding delivery options and the lack of medical evidence specifically regarding midurethral sling and subsequent mode of delivery, and she decided to attempt a vaginal delivery.

She spontaneously went into labor at 38 weeks and had a vaginal delivery of a 3176-g infant in July 2009. Her second stage of labor lasted a mere 12 minutes, and she was without any vaginal lacerations. During and immediately after labor, no physical abnormalities were noted on palpation of the urethra and anterior vaginal wall.

From the Urogynecology and Reconstructive Pelvic Surgery, Atlantic Health, Morristown and Summit, NJ.

Reprints: Christa M. Lewis, DO, Division of Urogynecology and Reconstructive Pelvic Surgery, Atlantic Health, 95 Madison Ave, Suite 204, Morristown, NJ 07960. E-mail: Christa.Lewis@atlantichealth.org.

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She experienced no voiding dysfunction and remained continent for her entire postpartum course. One year after her delivery, she still had no lower urinary tract complaints whatsoever, and she had a negative standing stress test (bladder volume, 300 mL) and a postvoid residual of less than 10 mL.

DISCUSSION

Given the prevalence of female SUI and its effects on quality of life, many patients desire better treatment options in the form of surgical management before completing their family. However, the big question remains among those performing midurethral slings before completion of childbearing: cesarean delivery or vaginal delivery?

Kohorst et al⁵ recently published a review looking at the literature on patients who had undergone midurethral sling placement followed by subsequent pregnancy. They found 12 case reports regarding pregnancy after midurethral sling placement. Thirteen patients underwent cesarean delivery, and 16 patients underwent vaginal delivery. Most patients remained continent after delivery; however, recurrent SUI was seen in 1 patient who delivered via cesarean and 4 women who delivered vaginally. It seems that vaginal delivery after midurethral sling placement in lieu of cesarean delivery does not significantly increase the likelihood of SUI; however, the numbers are too small to conclude definitively one way or the other.⁶ At worst, it appears that recurrent SUI after delivery is the most common complication. Specifically, when postpartum continence was assessed in a questionnaire distributed to members of the American Urogynecology Society, based on delivery status, 73% of patients who delivered vaginally remained continent and 95% of patients who delivered via cesarean section remained continent.⁷ In the event of recurrent SUI, placement of a second midurethral sling would be a reasonable option. In those patients undergoing repeat procedures, it is important to include counseling on the potential decreased success rates associated with subsequent repeat midurethral sling placement.

The theoretical concern among clinicians that the sling could cause urethral and/or bladder laceration has not been borne out in the literature. We performed a PubMed literature search from January 1998 through August 2010 including the following key words: “TVT & pregnancy,” “TOT & pregnancy,” “SVD & urethral tear,” “bladder injury & suburethral sling,” “urethral injury & suburethral sling,” and “pregnancy & suburethral sling,” without any documented case reports identified. So it seems that the postpartum course for these patients is usually uncomplicated.

However, antenatal surveillance is prudent, given case reports of second- and third-trimester urinary tract infections, urethral obstruction, and urinary retention in rare cases.^{6,8}

Our patient was considering multiple future pregnancies, so delaying her treatment until after her family was complete

would have resulted in many unnecessary years of severe SUI. In addition to the obvious quality-of-life implications that go along with severe SUI, there are also psychiatric implications.

Major depression is 3 times higher in incontinent women than their counterparts, and an association has been identified between the severity of incontinence and major depression.⁹ Perhaps, this brings into question whether refusing surgical therapy to patients with future desires of pregnancy could be construed as archaic, especially with the high success of surgical management.

Midurethral sling placement may be a valid treatment option for patients with stress incontinence even if they are contemplating future pregnancies and subsequent vaginal delivery. Every additional case report adds to the body of literature that can be used to help patients make informed decisions and help improve the gap in medical literature until further prospective trial results. In the meantime, it is unlikely that definitive proof is forthcoming, and until then, clinicians may present the limited data to patients with dutiful respect for patient autonomy.

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