Pelvic hematoma following transobturator tape procedure: case report and review of literature

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Objective: The transobturator tape (TOS) procedure is rapidly becoming a preferred treatment for female stress urinary incontinence due to excellent outcomes and minimal morbidity. Though rare, significant bleeding complications can occur.

Material and methods: We review our experience and available literature of pelvic hematoma formation after TOS placement.

Results: A 56-year-old woman underwent a TOS procedure for stress incontinence. She returned on postoperative day three with nausea and vague

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Address correspondence to Dr. Carl Klutke, 1040 North Mason Road, Suite 122, St. Louis Missouri USA 63141 suprapubic discomfort, though voiding without difficulty. Office ultrasound and computed tomographic imaging revealed a bi-lobed 8 cm x 10 cm x 11 cm hematoma in the Space of Retzius. She was treated conservatively with intravenous pain medication and antiemetics and without blood transfusion. Four weeks after the procedure, the patient had no voiding, pain, or bowel complaints. Literature review yielded two other reports of five patients with similar presentations who were successfully treated conservatively.

Conclusions: Pelvic hematoma formation after the TOS procedure is a rare event and can usually be managed conservatively.

Key Words: transobturator tape, hematoma, urinary stress incontinence

Introduction

The transobturator tape (TOS) was introduced in 2001 for the treatment of female stress urinary incontinence.¹ One of the potential advantages of this technique is the decreased risk of injury to pelvic structures by avoiding needle passage into the retropubic space. However, we describe one case in which a clinically significant pelvic hematoma developed after TOS placement.

Case presentation and management

A 56-year-old woman presented with bothersome stress urinary incontinence. Evaluation of her current complaint revealed a mobile urethra, stable cystometrogram, and complete bladder emptying. She had a positive cough stress test at 100 ml and higher with a Valsalva leak point pressure of 197 cm H₂O at an infused volume of 150 ml. She underwent a transobturator sling procedure (TOT® Mentor, Santa Barbara, California) with intravenous sedation and local anesthesia. Her preoperative hemoglobin was 12.1 g/dl. Intraoperatively, passage of the Emmett needle and placement of polypropylene mesh was inserted without difficulty, as described by Delorme.¹ She had no evidence of hematuria or excessive vaginal bleeding during the case. The patient was discharged the day of surgery voiding to completion and without complaints. She presented to the office on postoperative day three with nausea and vague suprapubic discomfort, though still voiding without difficulty. Office ultrasound revealed a fluid collection anterior to the bladder consistent with a pelvic hematoma. She was treated conservatively with oral pain medication. The patient returned to the hospital on postoperative day five with complaints of severe stabbing suprapubic pain associated with nausea. Computed tomography (CT) imaging of the abdomen and pelvis revealed a large bilobed 8 cm x 10 cm x 11 cm hematoma in the Space of Retzius displacing the bladder superiorly and laterally, Figure 1. The patient was admitted for pain and nausea control. Her pain and nausea were controlled with intravenous medications, and she was discharged home in stable condition 2 days after admission. Her hemoglobin was 8.9 g/dl on admission and remained stable at 8.7 g/dl prior to discharge without transfusion



Figure 1. Non-contrast CT of pelvis demonstrates an $8 \text{ cm} \times 10 \text{ cm} \times 11 \text{ cm}$ bi-lobed hematoma (H) in the Space of Retzius, displacing the bladder (B) superiorly and laterally.

of blood products. She recovered uneventfully from that point. At her 4-week postoperative visit, she had no incontinence, pain, or bowel complaints. Her hemoglobin at that time was 11.1 g/dl.

Discussion

The TOS procedure is rapidly becoming a preferred treatment for female stress urinary incontinence due to excellent outcomes and minimal morbidity.² In contrast to TVT,³⁻⁷ pelvic hematoma formation after TOS placement is a rare event,⁸ since the sling placement needle should not violate the retropubic space. To our knowledge, there have been only two previous reports of pelvic hematoma development after TOS placement. Rajan et al described a patient who presented 6 days after TOS placement with hip and suprapubic pain and bruising.9 CT imaging revealed a 7 cm pelvic hematoma. At 6 weeks, the hematoma had reduced in size, and the patient improved without surgical intervention. Additionally, in a trial by Juang et al examining sling efficacy with or without bladder denervation in 96 patients, four patients were noted to have pelvic hematomas ranging in size from 4 cm to 10 cm.¹⁰ Presenting symptoms were not mentioned, and all hematomas resolved without intervention.

Rajan et al suggests that pelvic hematoma development after TOS is likely due to incomplete needle rotation during needle passage through the obturator foramen, with inadvertent violation of the retropubic space.⁹ Similarly, incomplete rotation during needle passage can result in bladder injury. Ideally, during TOS placement, the retropubic space should not be entered. To reduce the chance of entering this space during TOS placement, we recommend bluntly dissecting the space between the urethra and anterior vaginal wall at the beginning of the procedure. This allows the surgeon to pass an index finger through this space into the obturator foramen, where the needle tip can be palpated. The needle tip can then be guided toward the medial vaginal incision, avoiding bladder perforation or entry into the retropubic space by the needle.

Patients with worsening suprapubic discomfort subsequently following TOS placement should be suspected of having developed a pelvic hematoma. Abdominal ultrasound or CT can confirm hematoma formation. Since retroperitoneal hematomas as large as 10 cm have been reported, we recommend following blood counts and considering transfusion if the decline in blood counts are hemodynamically significant. Initial management includes pain control and supportive care. Since these hematomas are usually self-limiting, every effort should be made to avoid surgical or percutaneous intervention, since these procedures introduce a theoretical risk of infection.

Conclusion

When TOS is properly placed, there is little risk of injury to retropubic structures. Pelvic hematoma formation after the TOS procedure is a rare event and can usually be managed conservatively.

References

- 1. Delorme E. Transobturator urethral suspension: mini-invasive procedure in the treatment of stress urinary incontinence in women. *Prog Urol* 2001;11(6):1306-1313.
- Giberti C, Gallo F, Cortese P, Schenone M. Transobturator tape for treatment of female stress urinary incontinence: objective and subjective results after a mean follow-up of two years. *Urology* 2007;69(4):703-707.
- 3. Flock F, Reich A, Muche R, Kreienberg R, Reister F. Hemorrhagic complications associated with tension-free vaginal tape procedure. *Obstet Gynecol* 2004;104(5 Pt 1):989-994.
- Kolle D, Tamussino K, Hanzal E et al. Bleeding complications with the tension-free vaginal tape operation. *Am J Obstet Gynecol* 2005;193(6):2045-2049.
- 5. Neuman M. TVT and TVT-Obturator: comparison of two operative procedures. *Eur J Obstet Gynecol Reprod Biol* 2007;131(1):89-92.
- 6. Tamussino KF, Hanzal E, Kolle D, Ralph G, Riss PA. Tensionfree vaginal tape operation: results of the Austrian registry. *Obstet Gynecol* 2001;98(5 Pt 1):732-736.
- Giri SK, Wallis F, Drumm J, Saunders JA, Flood HD. A magnetic resonance imaging-based study of retropubic haematoma after sling procedures: preliminary findings. *BJU Int* 2005;96(7):1067-1071.
- 8. Huffaker RK, Copas P. Blood loss in the space of Retzius and pelvis with tension-free vaginal tape and trans-obturator tape procedures. *Tenn Med* 2006;99(11):43-44.
- Rajan S, Kohli N. Retropubic hematoma after transobturator sling procedure. Obstet Gynecol 2005;106(5 Pt 2):1199-1202.
- Juang CM, Yu KJ, Chou P et al. Efficacy analysis of trans-obturator tension-free vaginal tape (TVT-O) plus modified Ingelman-Sundberg procedure versus TVT-O alone in the treatment of mixed urinary incontinence: a randomized study. *Eur Urol* 2007;51(6):1671-1678; discussion 1679.