Int Urogynecol J (2006) 17: 176–177
DOI 10.1007/s00192-004-1280-3

ORIGINAL ARTICLE

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Transvaginal suture placement for bleeding control with the tension-free vaginal tape procedure

Received: 1 July 2004 / Accepted: 13 December 2004 / Published online: 24 February 2005

Abstract Tension-free vaginal tape (TVT) is a well-established surgical procedure for the treatment of female urinary stress incontinence. The operation, described by Ulmsten in 1995, is based on a midurethral Prolene tape support. TVT is accepted as an easy-to-learn and safe minimally invasive surgical technique. Intraoperative bleeding was described as complicating former surgical methods for correction of female urinary stress incontinence as well as TVT. The aim of this paper was to describe a simple transvaginal hemostatic suture placement to control accidental intraoperative hemorrhage. Of 566 patients undergoing TVT and followed for up to 68 months, 9 (1.6%) had intraoperative bleeding of 200–800 ml, all of which were diagnosed and corrected among the first 466 procedures. The last 100 patients had a transvaginal hemostatic suture placed whenever more than minimal bleeding occurred and hemostasis was achieved immediately with all. The benefit of this minimal, fast, and simple surgical step is assessed and discussed.

Keywords Operative bleeding · TVT

Introduction

The tension-free vaginal tape (TVT) procedure for surgical correction of female urinary stress incontinence was described by Ulmsten in 1995. Being a minimally invasive operation with a high success rate and a low complication rate, it has rapidly become popular since then [1–4]. Common complications of former operations for the treatment of urinary stress incontinence, such as operative field infection, pelvic or abdominal organ injury, as well as postoperative appearance of detrusor instability, sexual mechanical problems, and urethral erosion, are rare in the TVT era [1–3]. Intraoperative bleeding is known to complicate former types of corrective female urinary incontinence surgery [5]. TVT-related operative hemorrhage is relatively rare and affects only 1.2–1.9% of the procedures [1–3]. Reported here is a series of 566 TVT patients. The first group of 466 patients including 9 women (1.6%) in whom intraoperative bleeding occurred is compared to a group of 100 consecutive patients in whom a transvaginal hemostatic suture was placed whenever more than minimal bleeding occurred for hemostasis. The outcome of this surgical measure for reducing the intraoperative bleeding rate is addressed.

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Materials and methods

Patients diagnosed with urinary stress incontinence, both clinically and urodynamically, were referred for the TVT procedure. A total of 566 procedures were performed. The last 100 patients had a transvaginal hemostatic suture placed whenever more than minimal bleeding was observed coming out of the orifice of the TVT needle inframucosal tunnel. These 1.5-cm-long sutures were placed 3 cm laterally to the midurethra at the anterior vaginal wall, perpendicular to the imaginary line to the lateral fornix. The suture depth did not exceed the vaginal thickness to avoid hitting the bladder or the ureter. The relevant data were documented and patients were followed for up to 68 months.

Results

A total of 556 TVT procedures were performed from April 1998 to March 2004. Of these, 318 (51%) had significant pelvic floor relaxation necessitating anterior and/or posterior colporrhaphy and 44 (8%) had vaginal hysterectomy. Among the first 466 procedures of this

series, 9 patients (1.6%) were diagnosed with operative bleeding of 200–800 ml. Hemostasis with these patients was achieved by enlarging the initial cut at the anterior vaginal wall to enable appropriate exposure, for visualization and clamping of the bleeding vessels. A transvaginal hemostatic suture was designed to tie the damaged vessels passing at the inner surface of the vaginal wall. Hence, any operative bleeding events among the last 100 procedures of this series were dealt with by transvaginal hemostatic suture placement. This was done for 22 patients whenever more than minimal intraoperative bleeding occurred. No cases of significant operative bleeding were documented in these last 100 procedures.

Discussion

The TVT procedure, being a sling operation, carries the hazard of intraoperative retropubic bleeding [1–3]. This complication, although relatively rare, is accepted to be a potentially morbid complication as it may necessitate further surgical measures for bleeding control. Failure to correct this operative complication may lead to the need for extended surgical dissection for hemostasis, either by a vaginal or an abdominal approach. Blood transfusion, including the well-known related drawbacks, might be required as well. A late possible complication of such hemorrhage is formation of a retropubic infected hematoma [6]. The operating surgeon, occasionally meeting with a TVT-related operative bleeding, should be equipped with an efficient hemostatic technique. Some advocate a balloon technique [7] or arterial embolization [8] for this purpose. Reported here is a simple, safe, easy-to-perform, and apparently effective hemostatic transvaginal suture to control TVT bleeding. This suture is placed proximally to the bleeding point, for entrapment of the damaged vessels, passing along the inner surface of the vaginal wall. Doing this immediately achieves bleeding control. The author advocates the liberal use of this surgical step to reduce the incidence and severity of TVT-related operative hemorrhage. Care should be taken not to exceed the depth of the vaginal wall to avoid hitting the bladder and ureter.

Conclusions

The efficacy of introducing a transvaginal hemostatic suture to control TVT-related operative bleeding is addressed. In a series of 566 TVT procedures, 9 women (1.6%) were diagnosed with operative bleeding of 200–800 ml among the first 466 procedures. In the last 100 procedures, when the hemostatic suture was placed whenever intraoperative bleeding was noticed, no further significant operative hemorrhage was recorded. This suture is easy, fast to perform, and effective in reducing the rate and severity of intraoperative TVT-related bleeding.

References

1. Ulmsten U, Henriksson L, Johnson P et al (1996) An ambulatory surgical procedure under local anesthesia for treatment of female urinary incontinence. Int Urogynecol J 7:81–86
2. Olsson I, Kroon U (1999) A three-year postoperative evaluation of tension-free vaginal tape. Gynecol Obstet Invest 48:267–269
3. Kuuva N, Nilsson CG (2002) A nationwide analysis of complications associated with the tension-free vaginal tape (TVT) procedure. Acta Obstet Gynecol Scand 81:72–77
4. Paraiso MFR, Muir TW, Sokol AI (2002) Are midurethral slings the gold standard surgical treatment for primary genuine stress incontinence? J Am Assoc Gynecol Laparosc 9:405–407
5. Waetjen LE, Subak LL, Shen H et al (2003) Stress urinary incontinence surgery in the United States. Obstet Gynecol 101:671–676
6. Neuman M (2002) Infected hematoma following tension-free vaginal tape implantation. J Urol 168:2549–2550
7. Aungst M, Wagner M (2003) Foley balloon to tamponade bleeding in the retropubic space. Obstet Gynecol 102:1037–1038
8. Elard S, Cicco A, Salomon L, You K, de La Taille A, Vordos D et al (2002) Embolization for arterial injury incurred during tension-free vaginal tape procedure. J Urol 168:1503