

Tip/Trick 1

Transvaginal Tape Mobilization for Urinary Retention Following Tension-Free Vaginal Tape Procedures

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OBJECTIVE: To evaluate the efficacy of transvaginal tape mobilization for the treatment of urinary retention following Tension-free vaginal tape procedures (TVT) and to determine the appropriate time to perform tape mobilization in patients with urinary retention. **METHODS:** A retrospective analysis of all women who underwent TVT by one surgeon between December 1, 2000 and November 1, 2003 was performed. Preoperative assessment included a detailed history, physical & POP-Q examinations, and multichannel urodynamic testing. TVT was performed under local, regional or general anesthesia at the surgeon's discretion. Additional surgical procedures were performed as indicated. Suprapubic catheterization was routinely used to evaluate postoperative voiding function and was discontinued after resumption of adequate voiding (postvoid residual $\leq 25\%$ of the total bladder volume on two consecutive occasions). Voiding trials were performed following a standard written protocol. Patients with postoperative urinary retention underwent TVT mobilization. This was performed by reopening the vaginal incision and gently applying downward traction to the tape with a right-angle clamp until it was mobilized. The incision was subsequently irrigated and closed. Voiding trials were resumed following TVT mobilization and suprapubic catheterization was discontinued after resumption of adequate voiding. The time to adequate voiding following TVT was analyzed using Kaplan-Meier statistics. **RESULTS:** TVT was performed in 163 consecutive stress-incontinent women ages 37-86 (mean 65) years during this period. Thirty-two (20%) had previous anti-incontinence procedures. Three women with bladder perforations and three who did not undergo voiding trials were excluded from data analysis. Of the remaining 157 women, 59 (37%) underwent only TVT and 98 (63%) underwent TVT with surgery for pelvic relaxation. Adequate voiding was achieved by 33 hours in 56 women who underwent only TVT and by 74 hours in 91 who underwent TVT with concomitant surgery. Ten (6%) women with complete urinary retention underwent transvaginal mobilization of TVT between postoperative days 3 -10. Seven had previously undergone TVT with concomitant pelvic surgery while three had undergone only TVT. All patients were able to void spontaneously following TVT mobilization, had resolution of irritative bladder symptoms, were subjectively continent of urine, and had negative cough stress tests six weeks and one year postoperatively. Urinary retention following TVT was not associated with patient age, vaginal parity, BMI, previous pelvic surgery, preoperative voiding mechanism, anesthesia type, or concomitant pelvic surgery. **CONCLUSIONS:** Transvaginal mobilization is an effective method of treating urinary retention following TVT procedures and may be considered if adequate voiding has not occurred by 33 hours when TVT is performed alone or by 74 hours when TVT is performed with other pelvic surgery.

Disclosure – Nothing to disclose

Tip/Trick 2

A Prospective Randomized Trial of Wide Spread Local Anesthesia with Intravenous Sedation versus General Anesthesia for the Vaginal Correction of Pelvic Organ Relaxation

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OBJECTIVE: To compare the safety, efficacy, and feasibility of wide spread local anesthesia with IV sedation versus general anesthesia for vaginal correction of pelvic relaxation. **METHODS:** In a

prospective fashion patients with symptomatic pelvic organ prolapse who desired surgical correction were eligible. Patients who were scheduled for an anterior or posterior colporrhaphy or colpectomy and colpocleisis with or without an anti-incontinence procedure and who did not have a contraindication or preference to either type of anesthesia were included. Patients with suspected enteroceles who were not undergoing colpectomy or colpocleisis were excluded. All eligible patients willing to participate were randomized to one of the two anesthesia groups. For the local group 1% Lidocaine with epinephrine or 0.25% Marcaine was directly infiltrated in the tissue, and in most cases 1% Lidocaine was administered as a standard pudendal nerve block. Intravenous sedation consisted of standard midazolam, propofol and fentanyl. Operative data collection consisted of anesthesia time, length of surgery, blood loss, and intraoperative complications. Recovery room time and need for additional anesthesia were also recorded. Postoperative data included overall postoperative hospital course, doses of additional pain medications and antiemetics and a standardized visual analogue pain scale given at 6-12, 18-24 and 36-48 hours postoperatively. A power analysis of 90% with $\alpha=0.05$ to detect a 2.5 difference on pain scale scores indicated that 18 patients were needed for each group. **RESULTS:** Seventeen patients were randomized to the general anesthesia group and 20 were randomized to the local group, but 3 patients (2 of whom had enterocele repairs) were converted to general, and analyzed as part of this group because they did not tolerate IV sedation with local anesthesia. Patient's demographic data were similar between the two groups. Operating room time, surgical time, and recovery room time was significantly longer in the general group, with 10 patients in the local group bypassing the recovery room. Additionally, patients in the general group required a significantly greater dose of postoperative analgesics. Postoperative requests for antiemetics were similar in both groups. Mean hospital length of stay was identical for the 2 groups (2.2 +/- 1.97) as was mean pain scores (3.1 +/- 1.9). **CONCLUSIONS:** Wide spread local anesthesia with IV sedation is safe and effective for vaginal surgery to treat pelvic organ prolapse and offers the advantage of shorter operating room and recovery room time and decreased post-operative analgesia compared to general anesthesia.

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Tip/Trick 3

Improved Original Technique for Burch Colposuspension

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In Burch colposuspension, elevation of the paravaginal fascia to Cooper's ligament is believed to restore continence by forming a hammock under the proximal urethra that elevates and provides structural support. Particularly troublesome possible perioperative complications of this procedure are injury to the bladder or urethra and bleeding from the large perivesical veins. Given the possibility of fistula formation, consequences can be serious in cases where such injury goes unrecognized – rapid blood loss often necessitating transfusion. Risk of inadvertent bladder and urethral injury and bleeding is greatest during placement of the elevating sutures. Particular risk attends placement in patients with excessive scarring from previous repair, in whom the bladder edge and deeper paravesical vessels cannot be easily identified. Although, risk of including the bladder in the elevating sutures can be avoided by establishing indirect contact between the fingers in the vagina and the one in the space of Retzius, the above intraoperative complications are still happened.

In this presentation we will describe a useful original, alternative to digital elevation of the paravaginal fascia, technique, which has been introduced by the author in 1997 and successfully used in more than 60 patients. The essence of this procedure is comprised of the elevation of the lateral vaginal fornices and their transillumination by insertion into the vagina cystoscope, before placing the elevating sutures. Holding the cystoscope in side of the vagina in the nondominant hand, the operator can easily manipulate with the cystoscope tip, pushing up and transilluminating the tissue, and to choose a safe position when placing the needle. This innovation allows the operator to see and delineate the major vessels and the bladder edge. In addition, elevation of the vaginal fornices with the lighting instrument should help avoid the likelihood of inadvertent puncture of the vaginal fingers when introducing the needle through the full thickness of the paravaginal fascia, avoiding need for a sterilized sewing thimble or special puncture-resistant protective pad.

Disclosure – Nothing to disclose

Tip/Trick 4

Management of Vesicouterine Fistulas: A Report of 8 Cases

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OBJECTIVE: Report the occurrence, etiology, diagnosis, and management of vesicouterine fistulas (VUF).

METHODS: Chart review was performed on women diagnosed with VUF from 1989 to 2002 for presentation, evaluation, treatment and outcome.

RESULTS: Eight women with VUF were identified. Etiologies were obstetrical injury (n=6; mean age 33 yr.) and inflammatory bowel disease (colo-VUF) (n=2; mean age 61 yr.). All obstetrical injuries resulting in VUF were related to cesarean section, 4/6 repeat cesarean and 2/6 attempted vaginal birth after cesarean section. 2/6 had a recognized bladder injury at time of cesarean. Presenting complaints were vaginal urinary incontinence (4), cyclic menouria (3), and vaginal discharge (2). Diagnosis was made via cystoscopy in 7/8 and CT imaging in 1/8. One patient had an additional ureterovesical fistula seen on intravenous urography. Location of VUF was between posterior bladder and anterior uterine walls above the internal os. Treatments included hysterectomy in 3/8 women all performed transabdominally, one requiring sigmoid resection (colo-VUF). Abdominal exploration was required in 2/8 patients. Fistula excision and omental flap in one patient and fistula excision with sigmoid resection in an additional patient both with uterine preservation. One was repaired transvaginally with excision of the fistula tract and uterine preservation. 2/8 women failed hormonal treatment with progesterone therapy and went on to surgical treatment. One uterovesical fistula was managed with ureteral stent placement with resolution of symptoms.

Mean follow-up of 9 months (2-24) was reported with resolution of urinary incontinence in 6/8. Two women with delayed surgical repair were lost to follow-up. Fertility was preserved in 2/8 with one subsequent term pregnancy managed with cesarean section.

CONCLUSIONS: Vesicouterine fistulas are often secondary to cesarean section and less commonly to inflammatory bowel disease. Symptoms range from cyclic menouria to intermittent or continuous urinary incontinence. Cystoscopic examination can identify the site of fistula and relationship to ureteric orifices while IVP is necessary to rule out ureteric fistula. Surgical repair is the primary treatment. Hysterectomy is not required for treatment of vesicouterine and fertility can be preserved in selected patients.

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Tip/Trick 5

Vaginal Vault Suspension Using the Posterior IVS Technique

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OBJECTIVES: To describe our initial experience with a novel procedure for correction of vaginal vault prolapse. The procedure entails posterior stabilization of the vaginal apex to a polypropylene tape placed bilaterally through the Iliococcygeus Muscle near Arcus Tendineus, through perianal incisions (Posterior IVS, Tyco/US Surgical).

METHODS: Women with vaginal vault prolapse who desired surgical repair underwent a posterior IVS procedure along with other indicated procedures (81% Anterior Repairs and 95% Posterior repairs). All women had at least Grade 2 symptomatic vault prolapse. Data collected included intra and post-operative complications, healing problems and resultant anatomic outcome.

RESULTS: 77 women underwent posterior IVS procedure between 10/02 and 12/03. Mean follow-up was 5.1 months (range 1 to 13). There were no intraoperative complications. Postoperative complications included mesh erosion/exposure 1 (1.2%), vulvar pain 1 (1.2%) At the last recorded follow-up visit, 64/65(98.5%) had Gr. 0/1 vault prolapse. Mean TVL was 7.6 (range 5 to 11), and mean point C was 7.0 (range 3 to 11). Postoperative cystocele > Grade 1 was noted in 4 patients(6.1%).

CONCLUSIONS: The posterior IVS technique results in satisfactory restoration of vaginal apical support without significant complications. Placement of permanent tape from pelvic sidewall to pelvic sidewall allows for attachment of endopelvic fascia to the neo-vault in correction of anterior and posterior fascial defects.

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Tip/Trick 6

Reported Cystoscopic Experience Correlates Poorly with Objective Operative Competency Assessment

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OBJECTIVE: To develop a reliable and objective training program for diagnostic cystoscopy with a rigid cystoscope. **METHODS:** Fourteen PGY4 residents were divided into four groups of three or four residents each. The course consisted of 45 minutes of lecture including: indications for cystoscopy, an introduction to instrumentation, procedural details, normal findings, abnormal findings, and how to manage complications such as impatent ureters or unintentional cystotomy. Next, the residents received personal instruction regarding the optics of a rigid cystoscope and performance of a systematic cystoscopic examination on a bladder model. After the residents felt comfortable with their skills on the model, they were individually tested on a cadaver. Performance was evaluated with two instruments:

an operation-specific checklist and a global ratings scale based on the OSATS model. Failure was defined as inability to perform a systematic exam and identify the ureters. The residents received immediate feedback on their performance based on their scores from the checklist and scale.

RESULTS: Nine of the fourteen residents were able to successfully perform a thorough diagnostic examination immediately after the course. The median time to initially complete a thorough exam was 191 seconds. Four of the five failures were subsequently re-evaluated two weeks later. All four were able to successfully perform a complete examination at that time. Prior to the course, the residents had performed an average of nine cystoscopic examinations (median 10, range 2-15). The number of reported cystoscopic examinations performed prior to the course did not correlate with an ability to perform a thorough cystoscopic examination. Furthermore, there was no correlation between the number of other reported endoscopic examinations (hysteroscopic or laparoscopic) and the ability to perform a thorough cystoscopic examination. There was excellent correlation between the scores on the checklist and the global ratings scale ($r = 0.77$ $p = 0.0012$). **CONCLUSIONS:** There is no relationship between the number of reported cystoscopic examinations and the ability to perform diagnostic cystoscopy for our residents. There is also no relationship between the number of endoscopic procedures and an ability to perform diagnostic cystoscopy. There was excellent correlation between performance on a task-specific checklist and a global performance instrument. In this paradigm, it is relatively easy to improve performance with specific feedback to correct a resident's technique. Trainees may not be able to define when they have received enough instruction in terms of hands-on training with models, prior to acquisition of technical skills.

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Tip/Trick 7

The Use of Foley Catheter Guide as Bladder Probe

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OBJECTIVE: We sought to find an inexpensive and effective instrument to aid in the identification of the border of the bladder in pelvic surgery. **METHODS:** Rectal and vaginal probes have been very helpful in performing complex pelvic surgery such as excision of rectovaginal endometriosis and vaginal vault suspension. Rectal and vaginal probes are easily inserted into the respective organs due to the relative large caliber of these two orifices. The design of a bladder probe is limited by the small caliber of the urethra. Currently most surgeons backfill the bladder via the Foley catheter in order to define the border of the bladder. However, the full bladder can obscure the operative field. Fluid filled bladder does not provide the same kind of tactile feedback as the hard surfaces of rectal or vaginal probes. The precise location of the border of bladder cannot be defined. Alternatively, some vaginal surgeons use rigid stainless steel catheter to define the extent of the bladder. The rigid stainless steel catheter is excellent for defining the base of bladder during vaginal surgery.

It is too short for abdominal or laparoscopic use. It also precludes the concurrent use of indwelling Foley catheter. We finally came upon the Foley catheter guide. It is used primarily in aiding the insertion of Foley catheter in male patients. It consists of a narrow caliber malleable stainless steel rod which is inserted inside the lumen of Foley catheter. It has a built-in hook which keeps the guide from slipping out of the Foley catheter. The balloon of the Foley catheter makes it difficult to perforate the bladder. It can be moved anywhere in the bladder. It can be inserted easily with the Foley catheter still in the bladder. **RESULTS:** We have used the Foley catheter guide as a bladder probe to avoid injury of the bladder in many difficult cases. It is useful for identification of the extent of the bladder during total

laparoscopic hysterectomy in patients with multiple cesarean sections. It is also useful when dissecting the bladder off pubocervical fascia during sacrocolpopexy or paravaginal defect repair.

CONCLUSION: The Foley catheter guide is a cheap, safe and effective bladder probe.

Disclosure – Nothing to disclose

Tip/Trick 8

Do Standard Obstetrics Textbooks' Recommendations for Preventing and Treating Perineal Injury at Delivery Reflect Current Evidence Based Literature?

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OBJECTIVE: To evaluate the extent standard obstetrics textbooks' recommendations for preventing and treating perineal injury at delivery reflect current, evidence-based literature. **METHODS:** A search of the Cochrane and Medline databases was performed to identify the literature pertaining to anal sphincter anatomy, use of episiotomy, and episiotomy and vaginal laceration repair. A perinatologist, OB/Gyn resident, and urogynecologist each evaluated seven commonly used general obstetrics textbooks using a standardized abstraction form. Each text was evaluated by searching the index for the terms: anal sphincter, anatomy, episiotomy, injury, labor, laceration, pelvic anatomy, pelvic floor, perineum, second stage of labor, and trauma. Texts were evaluated for overall content as well as consistency with the results of the literature review in 4 general areas: anatomy, use of episiotomy, prevention of perineal trauma, and repair of episiotomy or lacerations. Conflicting responses between the 3 reviewers were resolved by a fourth reviewer.

RESULTS: No text provided a detailed discussion of the external or internal anal sphincter, their correct dimensions, or the relative contribution of each component to continence. Only 2 texts (29%) described anal sphincter anatomy, each devoting no more than 2 paragraphs to the anal sphincter anatomy and no text described the anatomy of the sphincter in the section on repairing lacerations or episiotomies. Three texts (43%) discussed the evidence for, or against, median or mediolateral episiotomy as it pertains to the risk of sphincter injury, and only two texts (29%) discussed techniques to reduce perineal trauma at the time of delivery. Four texts (57%) stated that median episiotomy increased the risk of anal sphincter laceration, while the remaining 3 texts did not address the issue. Only two texts (29%) reported a decreased risk of sphincter laceration with mediolateral episiotomy. Seventy-one percent (6/7) stated that episiotomy should not be performed routinely. Only one text (14%) specifically discussed the need to re-approximate normal anatomy of the sphincter when repairing vaginal lacerations. Although all but one text described grading lacerations from first to fourth degree, only one described repair techniques for all grades in written form. Three (43%) used only figures to describe repair techniques. Three texts recommended a particular type of suture be used for repair but only two made recommendations consistent with the current literature. **CONCLUSION:** Overall, general obstetrics texts devote very little space to the prevention and repair of perineal trauma. While most texts accurately reflect the current literature regarding routine episiotomy use and increased risk of anal sphincter laceration with median episiotomy, the majority of the discussion on prevention and treatment of perineal trauma does not reflect the current evidence on this subject.

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