

Video 1

Uterosacral Ligament Vaginal Vault Suspension: A Systematic Approach

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OBJECTIVE: We present the surgical anatomy and steps to perform the uterosacral ligament vaginal vault suspension. **METHODS:** Video taping of cadaver dissection, laparoscopic surgery, and vaginal surgery is combined to demonstrate the surgical anatomy and steps of suspending the apex of the vaginal to the uterosacral ligaments for treatment of uterine or apical prolapse. The relationship of the uterosacral ligament and the ureter is presented. Color illustrations and animation compliment the presentation of the procedure. **RESULTS:** The uterosacral ligament vaginal vault procedure provides a vaginal approach to achieving bilateral apical support directed in the normal axis of the vagina. **CONCLUSION:** This video presents a detailed description of the surgical anatomy and steps of the uterosacral ligament vaginal vault procedure.

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Video 2

Extended Perineorrhaphy

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OBJECTIVE: To demonstrate the purpose and technique of the Extended (colpo-) Perineorrhaphy (EP), a minimally invasive operation for severe prolapse in elderly acoital women. **METHODS:** A modification of the old Martius Labhardt vulvoplasty was developed to offer a definitive, albeit obliterative, option to treat grades 3 and 4 pelvic organ prolapse (Baden-Walker system) in surgically at risk acoital patients. Patients were offered this operation after having failed or refused pessary care. The technique was designed to accomplish marked narrowing of the genital hiatus, tightening of the distended introitus, and creation of an exaggerated perineum; thus preventing prolapse exteriorization. The steps included: 1) excision of perineal and distal posterior vaginal skin, 2) levator plication, 3) deep connective tissue closure, 4) running closure of posterior vaginal and labial skin, and 5) wide crown stitches to create an exaggerated perineum. The EP was performed in 24 patients and their intra and postoperative courses were observed for subjective and objective cure or improvement and complications. A video was made to demonstrate the detailed technique of this procedure. **RESULTS:** The operation was successful in curing prolapse symptoms either alone or with the aide of an easily maintained pessary. In a review of 24 at risk acoital patients at a mean of 17 months (range, 3-75), in 16 (67%) their prolapse remained intra-vaginal, in 6 (25%) the prolapse was exteriorized but improved and they were now able to hold a pessary, and the remaining 2 cases (8%) were failures. Postop complications included 1-anemia with transfusion, 2 (8.3%) cellulitis and 3 (12.5%) partial breakdowns. Two of these 5 local healing problems required re-closure. Success defined by prolapse intra-vaginal with or without a pessary and no symptoms was 92%. **CONCLUSION:** The EP alone is a safe and effective operation for the cure of exteriorized prolapse in acoital women. Because of the inherent superficial nature of this procedure, it can be expected to have a shorter operative time, blood loss, hospital stay and recuperation when compared with the standard full reconstructive operation. The acoital patient formally relinquishes her vaginal function in return for a less invasive, effective treatment. Colpocleisis has been performed for the past century for just this

clinical situation. The addition of a vaginal closure may further improve the EP outcome. A randomized trial comparing the EP alone or with a vaginal closure is being started.

Disclosure – Nothing to disclose

Video 3

Robot-Assisted Laparoscopic Myomectomy

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OBJECTIVE: Advanced endoscopic skills are required for the successful performance of a laparoscopic myomectomy. In particular, the ability to suture is considered fundamental. For many surgeons, this is thought to affect conversion rates to laparotomy and possibly play a role in certain cases of uterine rupture. Because of the difficulty of laparoscopic suturing, we sought to evaluate the role of robot-assisted surgery and its ability to facilitate the performance of a laparoscopic myomectomy.

METHODS: The daVinci telerobotic system (Intuitive Surgical®) is a laparoscopic device designed to overcome the surgical limitations of conventional laparoscopy by providing surgeons with dexterity and precision coupled with three-dimensional imaging that allows for the completion of complex minimally invasive procedures. We analyzed all cases of robot-assisted laparoscopic myomectomy attempted with the daVinci telerobotic system at the University of Michigan between December 2001 and December 2003. The following video demonstrates the ability of robot-assisted technology to complete a laparoscopic myomectomy. **RESULTS:** Twenty-nine robot-assisted laparoscopic myomectomies were attempted with three conversions to laparotomy. All patients possessed symptomatic leiomyomata. In the group undergoing completed robot-assisted laparoscopic myomectomies, overall mean age was 36.2 years (24-46). Mean operative time was 238.6 minutes (93-384). The mean weight of leiomyomata removed was 248.5 grams (11-1127) in the twenty-five completed patients where weight was available. Average estimated blood loss was 177.7 mL (50-1000). The average hospital stay was 1.25 days (0-6). In the three patients converted to laparotomy, two were secondary to an inability to excise the leiomyomata as a result of an absence of haptic feedback. The third case was secondary to cardiogenic shock from vasopressin. The overall mean age of the three patients converted to laparotomy was 40.6 years (35-46). Mean operative time was 191.3 minutes (152-222). The mean weight of leiomyomata removed was 258.3 grams (130-325). Average estimated blood loss was 433.3 mL (200-700). The average hospital stay was 2.6 days (2-3). All twenty-nine patients are doing well and as of yet there are no reported pregnancies. **CONCLUSIONS:** Robot-assisted laparoscopic myomectomy is a promising new technique that allows for the removal of complex gynecologic pathology in a minimally invasive fashion and as evidenced by the video, facilitates laparoscopic suturing. Although robot-assisted surgery provides improved dexterity, precision, and imaging when compared to conventional laparoscopy, the absence of haptic feedback remains a major limitation.

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Video 4

Anatomy of the Trans-Obturator Mid-urethral Sling Procedure

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The trans-obturator mid-urethral sling was introduced as a potentially safer alternative to retropubic mid-urethral slings. The anatomy of the obturator region, however, is largely unfamiliar to physicians. In

this video we briefly review the proposed mechanisms for urinary continence and the impact mid-urethral slings have on them. The anatomy associated with insertion of a trans-obturator mid-urethral sling along with the important anatomic orientation differences of the trans-obturator sling are demonstrated. To aid in understanding, surgical footage, cadaver dissection and anatomic drawings are used. Although the efficacy and safety of the trans-obturator mid-urethral sling remains to be determined, the technique may hold both functional and safety advantages over retropubic mid-urethral slings.

Disclosure – Consultant: M.D. Walters, American Medical Systems; Paid Instructor: M.D. Walters, James L. Whiteside, American Medical Systems

Video 5

Overlapping Sphincteroplasty: The Colorectal Approach

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OBJECTIVE: To illustrate the surgical anatomy and technique of overlapping sphincteroplasty with internal anal sphincter repair for the treatment of fecal incontinence, as performed in conjunction with a colorectal surgeon.

METHODS: This 22 year old G1P1 was evaluated for complaints of daily fecal incontinence of solid and liquid stool since forceps delivery with a 4th degree laceration. On evaluation, she had a markedly deficient perineal body and thin rectovaginal septum. Endoanal ultrasound revealed a 50% anterior defect of the internal anal sphincter and a full thickness anterior defect of the external anal sphincter. Pudendal nerve terminal motor latency testing was normal on both sides. This video illustrates the surgical technique of overlapping sphincteroplasty with internal anal sphincter repair in the prone jackknife position. Surgical anatomy in this position is reviewed and novel surgical techniques, as illustrated by a colorectal surgeon, are discussed. Specifically, proper patient positioning and taping of the buttocks for visualization, performance of a perianal block, use of a self retaining retractor, dissection with the needle tip electrocautery to ensure a bloodless surgical field, separate dissection and repair of the internal and external anal sphincter and puborectalis muscles, and closure of the incision in a tripartite fashion with a central drain are shown.

RESULTS: The patient tolerated the procedure well and was discharged home after an uneventful recovery on oral antibiotics. Postoperatively the patient was continent of flatus, liquid, and solid stool and continues to have excellent anatomic and symptomatic results.

CONCLUSIONS: This video illustrates the advantages of performing overlapping sphincteroplasty with the patient in the prone jackknife position, and demonstrates the surgical techniques utilized by colorectal surgeons to facilitate dissection and ensure optimal outcomes for sphincter repair.

Disclosure – Nothing to disclose

Video 6

Surgical Repair of a Chronic Fourth-degree Perineal Laceration

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OBJECTIVE: To demonstrate the Noble-Mengert-Fish procedure with an overlapping external anal sphincteroplasty and Martius graft in the repair of a chronic, recurrent fourth-degree laceration.

METHODS: A surgical videotape presentation of the repair of a complete perineal laceration in a patient who had three previous failed attempts at repair and was incontinent of stool. The Noble-Mengert-Fish procedure may be used to repair perineal lacerations and rectovaginal fistulas involving the lower half of the vagina. It may be used with an intact perineum and intact external anal sphincter or with incomplete and completed lacerations of each. The aim of the operation is to mobilize the anterior rectal wall thereby creating a full thickness anterior rectal wall flap, including mucosa, submucosa and muscularis. This flap is then advanced to cover the anal verge and is sewn, without tension, over the newly reconstructed external anal sphincter and perineal body. The procedure is easily performed with an overlapping external anal sphincteroplasty, Martius graft transposition, and perineorrhaphy.

RESULTS: Complete reconstruction of the perineal body and anal sphincter was performed with preservation of the caliber of the lower vagina. The procedure was associated with minimal blood loss and there were no postoperative complications. The patient is now continent of stool and is satisfied with the cosmetic result.

CONCLUSION: The Noble-Mengert-Fish procedure is effective in the repair of primary and recurrent, chronic fourth-degree perineal lacerations. An overlapping external sphincteroplasty and Martius graft are easily performed as concomitant procedures. A single curvilinear incision provides excellent surgical exposure and permits repair of all perineal defects.

Disclosure – Consultant: W.G. Hurt, Eli Lilly Co., Inc.; Speaker’s Bureau: C.M. Nichols, Pfizer Co., Inc.

Video 7

Techniques to Improve Efficiency during Laparoscopic Sacral Colpopexy

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OBJECTIVE: Abdominal sacral colpopexy is an effective surgical procedure for treatment of vaginal apex prolapse. Recently, the laparoscopic approach has been described for sacral colpopexy. Obstacles of widespread adoption of the laparoscopic approach are the steep learning curve, poor tactile sensation, long operative times, and difficulty suturing into the rectovaginal and presacral spaces. In order to improve efficiency, minimize complications, and enhance effectiveness, the technique continues to evolve. The purpose of this video is to illustrate techniques that can improve surgical efficiency during laparoscopic sacral colpopexy. **METHODS:** Our surgical technique has evolved during the experience of performing over 80 laparoscopic sacral colpopexies. Procedure footage and illustrations are used to demonstrate patient positioning, trocar placement, instrumentation, surgical tips, and complication avoidance strategies. **RESULTS:** Proper setup and streamlined surgical technique facilitate performance of laparoscopic sacral colpopexies. Review of our outcome data show comparable results between laparoscopic and open sacral colpopexies. **CONCLUSIONS:** Laparoscopic sacral colpopexy in experienced hands can be efficiently accomplished utilizing the helpful techniques presented in this video.

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