



# Local anesthesia with sedation for transvaginal correction of advanced genital prolapse

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#### **KEY WORDS**

Genital prolapse Allograft Anesthesia **Objective:** The purpose of this study was to evaluate local anesthesia with sedation for vaginal surgery for advanced genital prolapse.

**Study design:** Five sacrospinous ligament suspensions and 12 vaginal paravaginal defect repairs performed under local anesthesia in 2004 were identified. Medical records and patient satisfaction questionnaire were reviewed. Patient demographics, degree of prolapse, duration of surgery, hospital stay, and responses to an anesthesia satisfaction questionnaires were recorded.

**Results:** All repairs incorporated placement of dermal allograft. Concomitant procedures included: 6 tension-free vaginal tape (TVTs), 12 posterior and 4 enterocele repairs. Mean patient age was 66.1 years. All patients had prolapse of apex or anterior wall ≥ grade 3. Mean OR time was 132 minutes. Average hospital stay was 1.2 days. No patient was converted to general anesthesia. All 17 patients were "very satisfied" with their surgical experience.

**Conclusion:** Local anesthesia with sedation can be successfully employed for most vaginal reconstructive surgeries with advanced genital prolapse. Patients report a high level of satisfaction.

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In the coming years, gynecologic surgeons will be performing an increasing number of procedures on women over the age of 65. In 2002, over 200,000 gynecologic surgeries were performed on women over 65 in the United States. Population projections anticipate a doubling of the geriatric population over the next 30 years, so it is likely this number will substantially increase. Many of these surgeries will be vaginal recon-

In 1994, Ferry and Rankin<sup>3</sup> reported the first large series of gynecologic procedures performed in an outpatient setting under local anesthesia. They were able to demonstrate that local anesthesia was accepted by women for procedures such as cervical cone biopsy, termination of pregnancy, hysteroscopy, and vulvar surgeries. Many such procedures are now commonly performed under local anesthesia. In 1995, Miklos et al<sup>4</sup> published the first series of vaginal reconstructive surgeries performed under local anesthesia with sedation. Twenty elderly

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structive procedures for pelvic organ prolapse and urinary incontinence. Because these procedures are usually elective and are performed to improve quality of life, it is important to find ways to decrease the risks of surgery and allow more geriatric patients to benefit from reconstructive surgery.

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women (mean age 80 years), who were considered poor candidates for general anesthesia, underwent a variety of procedures, including anterior and posterior repair, enterocele repair, and colpocleisis. They demonstrated the feasibility and success of such reconstructive procedures in women who might otherwise be denied surgical intervention. Two subsequent studies described the combination of vaginal reconstructive surgery and tension-free vaginal tape (TVT) under local anesthesia.<sup>5</sup> In 2001, Jomaa performed 32 TVT procedures combined with anterior and/or posterior repair under local anesthesia with sedation.<sup>6</sup> In 2003, Moore and Miklos successfully combined colpocleisis and TVT under local anesthesia and sedation in 30 consecutive patients. In a recently published study, Axelson and Bek<sup>8</sup> performed 80 anterior repairs under local anesthesia with sedation, with a high rate of patient satisfaction. We have previously reported on 87 consecutive vaginal reconstructive procedures, including anterior and posterior colporrhapies, enterocele repairs, and colpocleisis, performed under local anesthesia with sedation, with and without concomitant continence repair. While these reports are promising, they have been limited to relatively minor reconstructive procedures. Correction of apical prolapse with vaginal suspension procedures and complex vaginal reconstruction with dermal allograft reinforcement has not yet been reported. Our objective is to report our experience with local anesthesia with sedation for patients undergoing complex vaginal reconstructive procedures, including either sacrospinous ligament suspension or paravaginal defect repair.

#### Material and methods

The Internal Review Board of the University of Rochester granted exempt status for this study. All cases of complex vaginal reconstructive surgeries performed by the principal author (G.M.B.) at the University of Rochester Medical Center between January 2004 and September 2004 were reviewed. Complex vaginal reconstructive surgery was defined as any procedure including either vaginal sacrospinous ligament suspension or vaginal paravaginal defect repair. Excluded were anterior and posterior repairs, enterocele repair, colpoclesis, perineoplasty, and placement of suburethral slings because performance of these procedures under local anesthesia has previously been reported. Also excluded was vaginal hysterectomy because this was not attempted under local anesthesia at the time of this study.

For all cases reviewed, each woman had preoperative assessment including comprehensive medical history, 48-hour voiding diary, physical examination, and multichannel urodynamics. At the time of the preoperative visit, each woman was counseled regarding options for anesthesia: general anesthesia, regional anesthesia, and

local anesthesia with sedation. Local anesthesia was the surgeon's preference and potential benefits were discussed, including decreased postoperative nausea, less sore throat, and more rapid recovery. The principal author (G.M.B.), assisted by the fellow in urogynecology or the senior resident on the urogynecology service, performed all procedures. All surgeries were performed with patients in dorsal lithotomy position with Allen stirrups for support of the lower extremities. All patients received prophylactic antibiotics and wore sequential compression devices on their lower legs. Sedation was established by the anesthesia team before injection of local anesthetic by the surgeon. Sedation was, most commonly, a short-acting opioid in combination with midazolam and/or propofol; the agents used were chosen and titrated for patient comfort by the anesthesia team. The amount of sedation required depended on the patient's body mass index (BMI), desired level of awareness, and the duration of surgery. All patients breathed on their own. Local anesthesia was a mixture of 2% nesacaine and 0.5% bupivacaine with or without epinephrine in a 1:1 ratio. Epinephrine was added for cases expected to exceed 1-hour operative time. The maximum dose of local anesthetic was calculated based on the limiting dose for bupivacaine of 2 mg per kg of body weight. The maximum dose for each patient was determined at the onset of surgery. Local anesthetic was injected subcutaneously at the surgical site. If multiple procedures were performed during 1 case, each surgical site was injected just before incision at that site. Pudendal blocks, using 5 mL of local anesthetic on either side, were administered for sacrospinous ligament suspensions. We used a Capio (Boston Scientific, Boston, MA) suture placement and retrieval device for placement of the sutures into the sacrospinous ligament and arcus tendineus fascia pelvis.

Information was recorded from the medical record of each patient, including age, medical and surgical history, preoperative diagnosis, procedures performed, estimated blood loss, type and amount of local anesthetic and used, sedative agents used, surgical time, postoperative disposition and recovery, and length of hospital stay. Information on satisfaction with local anesthesia with sedation was also recorded from a postoperative questionnaire routinely administered to the principal author's surgical patients prior to discharge from the hospital. The questionnaire included questions on overall satisfaction, pain, nausea, and ability to eat and ambulate after surgery, drowsiness, and comparison to previous anesthesia experiences (Table).

### Results

A total of 20 complex vaginal reconstructive surgeries were performed between January 2004 and September

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