

INCIDENCE AND RISK FACTORS OF POSTOPERATIVE STRESS URINARY INCONTINENCE AFTER LAPAROSCOPIC SACROCOLPOPEXY IN PATIENTS WITH NEGATIVE PREOPERATIVE PROLAPSE REDUCTION STRESS TESTING

Hypothesis / aims of study

Performing a simultaneous anti-stress urinary incontinence (SUI) procedure at pelvic organ prolapse (POP) repair is a topic of much debate. Indeed, it is not uncommon for stress continent women who have undergone a successful POP surgery to develop de novo SUI postoperatively. This may result from relieving the urethral obstruction caused by prolapse, thereby unmasking a pre-existing compromised urethral function (unmasking of occult SUI). In stress continent women who are to undergo POP surgery, there are several options: i) some groups recommend against performing any concomitant anti-SUI procedure as routine surgery for SUI is associated with a non negligible percentage of complications, ii) others dispute this recommendation and favor routine anti-SUI surgery as this may avoid the need for a second surgery in a substantial number of patients; 3) others would recommend evaluating for occult SUI before POP repair and performing an anti-SUI procedure in those who demonstrate occult SUI. A number of studies, including 3 randomized trials, have sought to address this issue by evaluating the benefits and disadvantages of an anti-SUI surgery (either Burch colposuspension or mid urethral sling) performed concomitantly to a POP repair done either by a transvaginal route (with or without mesh) or by an open abdominal route (sacrocolpopexy with mesh). To our knowledge, the incidence of de novo SUI following laparoscopic sacrocolpopexy (LSCP) for POP repair has not been thoroughly evaluated. In this retrospective study, we assessed the incidence of postoperative SUI after LSCP without a concomitant anti-SUI procedure in women with negative preoperative stress testing with prolapse reduction. We also sought to identify risk factors associated with the development of postoperative SUI in these patients.

Study design, materials and methods

This retrospective study was performed by reviewing the charts of all consecutive women who underwent a LSCP procedure between January 2008 and December 2010 at a tertiary referral center. Only patients with negative preoperative prolapse reduction stress testing (PPRST) and with no concomitant mid urethral sling procedure were included in the study. Patients who had undergone a previous POP and/or anti-SUI surgery, or who had a neurogenic bladder were also excluded from the final analysis. All patients were expected to have a minimum followup of 1 year. Preoperative evaluation included detailed history, physical examination with stress test (with and without manual prolapse reduction), cystoscopy, and multichannel urodynamic studies (UDS) with prolapse reduction. All patients had symptomatic grade ≥ 2 POP according to the Baden-Walker classification (prolapse to or beyond the hymenal ring). Women underwent first a cystoscopy with the bladder filled until maximum capacity (when the subject could no longer delay micturition) and a cough test was carried out without and then with manual prolapse reduction. Women were considered to have clinical SUI if they leaked on coughing with or without prolapse reduction. UDS were subsequently performed with prolapse reduction using the swab technique (vaginal packing) and stress manoeuvres were performed at 300mL and at every additional 50mL until SUI was eventually noted or maximal bladder capacity was attained. If no SUI was observed, the transurethral catheter was removed and the subject was asked to cough again. Women were considered to have urodynamic SUI when leakage on coughing was observed during a urodynamic session with prolapse reduction. Patients who had clinical and/or urodynamic SUI were generally offered a concomitant sling procedure; all other patients were considered to have a negative PPRST and in most of them, no concomitant sling surgery was carried out.

The LSCP procedures were performed by 2 experienced urologists using the same technique with 2 meshes (one anterior and one posterior) in all cases.

Postoperative evaluation was routinely performed at 1 month, 6 months, 1 year and yearly thereafter and included history and physical examination with a stress test. During followup visits, patients were asked about the symptom of SUI (documented as present or absent). Patients with postoperative SUI were offered physiotherapy (usually as initial treatment) or surgical management. Comparisons between patients with and without postoperative SUI were assessed using the Chi square test or the Mann Whitney test. Age, body mass index, parity, maximal urethral closure pressure (MUCP), and a history of SUI before LSCP were evaluated as potential risk factors for the development of postoperative SUI.

Results

A total of 106 patients underwent a double mesh LSCP during the study period; 12 patients were excluded (neurogenic bladder (n=2), prior POP and/or SUI surgery (n=10)). Among the 94 patients included in the analysis, 60 (63.8%) had a negative PPRST (no clinical or urodynamic SUI). Despite a negative PPRST, 5 patients who had a history of bothersome SUI before surgery were treated with a concomitant sling. The remaining 55 patients underwent LSCP alone; these patients were the subject of the present study.

Mean age of the patients was 63.6 ± 8.3 years (range 49-79). Mean BMI and parity were 25.4 ± 3.3 (range 20.0-32.1) and 2.7 ± 1.7 (range 0-9), respectively. Nine patients (16.4%) had undergone a previous hysterectomy. Most patients (78.2%) had grade 3-4 cystocele. On preoperative UDS, mean MUCP was 69.1 ± 24.1 cm H₂O (range 30-144). Mean operative time was 123 ± 28 minutes (range 72-186).

A concomitant laparoscopic procedure was carried out in 4 patients (1 subtotal hysterectomy, 2 oophorectomies, and 1 tubal ligation). No complication was encountered during and after surgery, with the exception of 1 bladder wall injury (cystotomy) that occurred while dissecting the intervesicovaginal space; it was sutured immediately and the urethral catheter was left in situ for 7 days. Mean hospital stay was 4.7 ± 1 days (range 4-8).

Mean followup was 25 ± 11 months (range 12-48). No mesh erosion was observed at followup visits and no patient developed recurrent POP. Out of the 55 patients with negative PPRST who did not undergo a sling procedure concomitantly to the LSCP, 30 (54.5%) reported postoperative SUI, 13 (23.6%) had a positive stress test at last visit and 9 (16.4%) underwent a sling procedure. Time between the LSCP and sling procedures ranged between 1 and 29 months (mean 10 ± 9).

Several variables were evaluated as risk factors for the development of postoperative SUI or the need for anti-SUI surgery. Only preoperative SUI was associated with a higher risk of reporting the symptom of SUI (subjective SUI; p=0.001), having a positive stress test (objective SUI; p=0.019), and requiring a sling procedure (p=0.026) after the LSCP.

The rates of postoperative subjective and objective SUI in women with a history of preoperative SUI were 100.0% (10/10) and 50.0% (5/10) while those in women with no history of preoperative SUI were 0.0% (0/45) and 17.8% (8/45), respectively. The percentage of women with a history of preoperative SUI who required additional surgery for SUI was 40.0% (4/10) while it was 11.1% (5/45) in women with no history of preoperative SUI.

Interpretation of results

In this retrospective study, after a mean followup of 25 months (minimum of 1 year) following double mesh LSCP for POP repair in women with negative PPRST, about half of the women reported SUI postoperatively, 1 in 4 had a positive cough test and 1 in 6 required additional surgery for SUI. Women who reported SUI preoperatively had a much higher risk of developing postoperative SUI; 40% needed further surgery for SUI. These informations are important for counseling before surgery. Of interest, the rates of postoperative SUI following LSCP in our patients with negative PPRST appear similar to those observed in women with a negative PPRST who underwent a transvaginal POP repair (1-2).

Concluding message

Postoperative SUI is not uncommon in patients with negative PPRST who undergo double mesh LSCP for POP repair without concomitant anti-SUI surgery. In women with a negative PPRST, a history of preoperative SUI substantially increases the risk of requiring additional surgery for SUI after LSCP. Whether a concomitant sling procedure should be systematically implemented in this group of patients would need to be tested in a prospective trial in which women with a history of preoperative SUI but negative PPRST who are to undergo LSCP for POP would be randomized to a concomitant sling versus no concomitant sling; safety, efficacy, and quality of life measures would be assessed.

References

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Disclosures

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