

# Clinical outcome of abdominal sacrocolpopexy

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## ABSTRACT

**Introduction:** Vaginal vault prolapse is one of the distressing conditions which occur after hysterectomy. This is due to the weakness or detachment of sacrouterine cardinal ligament complex from the vaginal cuff. Till now, the most accepted procedure for this condition is sacrocolpopexy.

**Materials and Methods:** We present a cohort of patients who underwent abdominal sacrocolpopexy (ASC) from April 2009 to August 2013. These patients were followed till April 2014 and were evaluated for subjective and objective outcomes following ASC.

**Results:** One patient had intraoperative hemorrhage and postoperative hematoma formation. One patient had vault abscess which was managed conservatively. Hundred percent success rate was noted at 1 year. Long-term patient satisfaction score was 85 (70-90).

**Key Words:** Mesh repair, sacrocolpopexy, vault prolapse

## INTRODUCTION

Vaginal vault prolapse is the descent of vaginal cuff below a point that is 2 cm less than the total vaginal length above the plane of the hymen.<sup>[1]</sup> The overall incidence of vaginal vault prolapse after hysterectomy is estimated to range from 0.2% to 1%.<sup>[2]</sup> Incidence is 11.6% following vaginal hysterectomy.<sup>[3]</sup> Most important risk factor for the development of vaginal vault prolapse is preoperative defect in the pelvic fascia which remained uncorrected at the time of hysterectomy.<sup>[4]</sup> Vaginal vault prolapse may present as urinary, anorectal, or sexual dysfunction. Conservative management as pelvic floor exercise and pessaries have limited role in vault prolapse.<sup>[5]</sup> Therefore, many surgical techniques have evolved over the time, but satisfactory correction still remains a challenge.

## MATERIALS AND METHODS

This cohort study was done in the Department of Obstetrics and Gynecology from April 2009 to August 2013. Sixteen patients who had undergone abdominal sacrocolpopexy (ASC) during this period for the complaints of something coming out of vagina were included in the study. After taking the consent, patients were examined in the outpatient department. Baseline characteristics and complaints were noted. Preoperative pelvic organ prolapse quantification classification was performed in all patients. ASC was carried out using polypropylene mesh with reperitonization of mesh in all patients. Intraoperative and postoperative complications were recorded. Patients were evaluated for quality of life and assessment of sexual, urinary, and bowel function on visual analog scale at 3 months and 6 months for short-term and medium-term outcomes, respectively.

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Long-term assessment was performed after 6 months from the surgery till April 2014. Long-term assessment included reassessment of medium-term outcomes and any recurrence or surgery done for vault prolapse. For long-term follow-up, patients were interviewed personally, telephonically, or by post.

## RESULTS

We are reporting a 5 years review of 16 patients who have undergone ASC in the department of Obstetrics and Gynecology from April 2009 to August 2013. Baseline characteristics were median age of 59 years, parity 3 (0-7), and mean weight 57.45 kg. Fourteen patients were having vaginal vault prolapse and two patients were having procidentia. 15 patients had delivered vaginally, out of which 12 deliveries were conducted by trained birth attendants. ASC and abdominal hysterectomy with ASC had been performed. Details of other baseline characteristics are shown in Table 1. Table 2 shows intraoperative and postoperative details. One retroperitoneal hematoma and one vault abscess were managed conservatively and both patients responded well.

On assessment of patients on follow-up at 3 months for short-term outcome, visual analog scoring was done. Short-term visual analog scoring for quality of life was 80 (70-90). Medium-term visual analog score was 80 (30-90). One patient had severe pelvic pain in medium-term complications. Its cause could not be ascertained despite all investigations. In view of severe pain, she was advised mesh removal on which patient was lost to follow-up. Long-term assessment was done after 6 months from the surgery till April 2014. Long-term assessment was done in 14 patients as 2 patients were lost to follow-up. Patient satisfaction scoring was done either in person or telephonically. Patient satisfaction score for long-term outcome was 85 (70-90). One patient had stress urinary incontinence and one had mixed urinary incontinence. None of the patient had recurrence or any other surgery for vault prolapse.

## DISCUSSION

Vaginal vault prolapse is a distressing condition which has negative impact on women's quality of life. Hence, preoperative counseling and assessment of the type of vaginal defect plays an important role. Management of these patients should be individualized, taking into consideration patient's age, comorbidities, type of previous surgery, physical and sexual life. Surgeon's expertise also influences the choice of operation.<sup>[6]</sup>

ASC is a retroperitoneal interposition of a suspensory synthetic, autologous, or allograft prosthesis between the

vaginal vault and the sacral promontory.<sup>[7]</sup> It allows more global support of vagina and distribution of tension over a large area. ASC has been proven superior to other techniques in terms of restoration of normal vaginal axis and maintenance of vaginal capacity.<sup>[8]</sup>

We found 100% success rate of sacrocolpopexy at 1 year. One out of 16 patients had hemorrhage and vault abscess. One out of 14 patients had stress urinary incontinence

**Table 1: Baseline characteristics**

Characteristics	Number of patients (n = 16)
Delivery <sup>a</sup>	
Normal vaginal	15
Infertile	01
Delivery conducted by <sup>a</sup>	
Trained birth attendant	12
Hospital delivery	03
Previous surgery <sup>a</sup>	
TAH	05
VH with PFR	08
TLH	01
Procidentia	02
Time since hysterectomy <sup>b</sup> (years)	9.7 (0-25)
Time since having complaints <sup>c</sup> (years)	5 (1 month-13 years)
Comorbidities	
Hernia	01
Bronchiectasis	01
POP-Q stage (preoperative)	
Cystocele	
Stage 1	01
Stage 2	07
Stage 3	08
Rectocele	
Stage 0	02
Stage 1	07
Stage 2	05
Stage 3	02
Enterocoele	
Stage 0	06
Stage 1	07
Stage 2	02
Stage 3	01
Vault prolapse	
Stage 1	06
Stage 2	08
Stage 3	02
Surgery performed	
ASC	14
TAH with ASC	02

Values are given <sup>a</sup>Number of patients, <sup>b</sup>Mean, <sup>c</sup>Median years. POP-Q: Pelvic organ prolapse quantification, TAH: Total abdominal hysterectomy, VH: Vaginal hysterectomy, TLH: Total laparoscopic hysterectomy, ASC: Abdominal sacrocolpopexy, PFR: Pelvic floor repair

**Table 2: Intraoperative and postoperative complications**

Intraoperative complication	Number of patients
Hemorrhage	01
Bladder injury	01
Vault opened	01
Postoperative complication	
Retroperitoneal hematoma	01
Fever	01
Vault abscess	01
Severe pain	01
Blood transfusion	02

and mixed incontinence. These results are comparable as reported in literature. Sacral osteomyelitis could be a probable cause of severe pain in one of our patient who was lost to follow. None of the patient had any bowel or sexual complaints.

Nygaard *et al.* in a review of 2178 patients reported a success rate of 78-100%. They reported 4.9% rate of stress urinary incontinence and 3.4% of patients had mesh erosion. Reoperation for small bowel obstruction was done in 1.1%.<sup>[9]</sup> Weidner *et al.* reported two cases of sacral osteomyelitis that were managed with parenteral antibiotics.<sup>[10]</sup> Hemorrhage from presacral veins had been reported in 1-2.6% patients.

Higgs *et al.* did a prospective cohort study of 148 patients who have undergone ASC for vaginal vault prolapse. They found 90% success rate with 3% recurrence rate. Subsequent surgery for stress urinary incontinence was done in 24% of patients. On long-term follow-up, 12% of the patients reported reduced vaginal capacity with dyspareunia. Subjective patient's satisfaction rate was 78%.<sup>[11]</sup>

Joen *et al.* did a retrospective study of 57 patients who underwent ASC. Median follow-up period was 66 months (range 66-108). Overall anatomical success rate was 86%. Recurrent stress urinary incontinence developed in 44.7% of the patients. No significant change was found in bowel habits or sexual function. Twelve patients had major complication and Intensive Care Unit admission.<sup>[12]</sup> Culligan *et al.* did a retrospective analysis of 245 patients who had undergone ASC. They reported failure in 37 (15.1%) of patients within 2 years of follow-up.<sup>[13]</sup>

Newer techniques such as laparoscopic and robotic sacrocolpopexy have evolved. Freeman *et al.* did a randomized control trial comparing abdominal and laparoscopic sacrocolpopexy for vault prolapse. In laparoscopic group, blood loss, fall in hemoglobin, and length of hospital stay were significantly lesser than

abdominal sacrocolpopexy. Prolapse after 1 year was almost similar in both groups. They concluded that both approaches were equally good.<sup>[14]</sup> Elliott *et al.* did a cost minimization analysis in robot-assisted and open sacrocolpopexy. They found that robot-assisted approach can be equally or less costly than open sacrocolpopexy. However, it depends on sufficient institutional robotic case volume and shorter postoperative stay for patients who undergo robotic-assisted procedure.<sup>[15]</sup>

Bassaly *et al.* did a survey about the technical preferences of surgeons performing sacrocolpopexy, a total of 235 doctors from six continents responded. Ninety percent of the respondents perform sacrocolpopexy procedures in their practices, including abdominal ( $n = 177$ ), laparoscopic ( $n = 92$ ), and robotic ( $n = 48$ ) procedures. They reported reduced blood loss, shorter hospital stay, and longer operative time during laparoscopic and robotic procedures compared with open ASC, but no differences in the overall major complications rate.<sup>[16]</sup>

Our study found success rate of 100% at 1 year which is almost equal to as that reported in literature. Although our intraoperative and postoperative complication rate appears to be high, it is due to small sample size and learning curve. Weakness of our study is fewer subjects for exact calculation of long-term complications. But then, follow-up till 5 years is the strength of our study.

## CONCLUSION

Good knowledge of pelvic anatomy, reducing the rate of hysterectomy, and proper technique at the time of hysterectomy can prevent development of this distressing problem. ASC is a good operative procedure for relieving this distress problem.

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## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

- Abrams P, Cardozo L, Fall M, Griffiths D, Rosier P, Ulmsten U, *et al.* The standardisation of terminology of lower urinary tract function: Report from the Standardisation Sub-committee of the International Continence Society. *Neurourol Urodyn* 2002;21:167-78.
- Dubuisson J, Eperon I, Dällenbach P, Dubuisson JB. Laparoscopic repair of vaginal vault prolapse by lateral suspension with mesh. *Arch Gynecol Obstet* 2013;287: 307-12.
- Marchionni M, Bracco GL, Checucci V, Carabaneanu A, Coccia EM, Mecacci F, *et al.* True incidence of vaginal vault prolapse. Thirteen years of experience. *J Reprod Med* 1999;44:679-84.

4. Dällenbach P, Kaelin-Gambirasio I, Jacob S, Dubuisson JB, Boulvain M. Incidence rate and risk factors for vaginal vault prolapse repair after hysterectomy. *Int Urogynecol J Pelvic Floor Dysfunct* 2008;19:1623-9.
5. Cutner AS, Elneil S. The vaginal vault. *BJOG* 2004;111(Suppl 1):79-83.
6. Uzoma A, Farag KA. Vaginal vault prolapse. *Obstet Gynecol Int* 2009;2009:275621.
7. Lane FE. Repair of posthysterectomy vaginal-vault prolapse. *Obstet Gynecol* 1962;20:72-7.
8. Grünberger W, Grünberger V, Wierrani F. Pelvic promontory fixation of the vaginal vault in sixty-two patients with prolapse after hysterectomy. *J Am Coll Surg* 1994;178:69-72.
9. Nygaard IE, McCreery R, Brubaker L, Connolly A, Cundiff G, Weber AM, *et al.* Abdominal sacrocolpopexy: A comprehensive review. *Obstet Gynecol* 2004;104:805-23.
10. Weidner AC, Cundiff GW, Harris RL, Addison WA. Sacral osteomyelitis: An unusual complication of abdominal sacral colpopexy. *Obstet Gynecol* 1997;90(4 Pt 2):689-91.
11. Higgs P, Goh J, Krause H, Sloane K, Carey M. Abdominal sacral colpopexy: An independent prospective long-term follow-up study. *Aust N Z J Obstet Gynaecol* 2005;45:430-4.
12. Jeon MJ, Moon YJ, Jung HJ, Lim KJ, Yang HI, Kim SK, *et al.* A long-term treatment outcome of abdominal sacrocolpopexy. *Yonsei Med J* 2009;50:807-13.
13. Culligan PJ, Murphy M, Blackwell L, Hammons G, Graham C, Heit MH. Long-term success of abdominal sacral colpopexy using synthetic mesh. *Am J Obstet Gynecol* 2002;187:1473-80.
14. Freeman RM, Pantazis K, Thomson A, Frappell J, Bombieri L, Moran P, *et al.* A randomised controlled trial of abdominal versus laparoscopic sacrocolpopexy for the treatment of post-hysterectomy vaginal vault prolapse: LAS study. *Int Urogynecol J* 2013;24:377-84.
15. Elliott CS, Hsieh MH, Sokol ER, Comiter CV, Payne CK, Chen B. Robot-assisted versus open sacrocolpopexy: A cost-minimization analysis. *J Urol* 2012;187:638-43.
16. Bassaly R, McCullough M, Hussamy D, Downes K, Hoyte L, Hart S. Technical preferences of surgeons performing a sacrocolpopexy procedure. *Surg Technol Int* 2012;22:189-94.

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