Original Article

Abdominal Sacro Colpopexy – Surgical Management of Post Hysterectomy Vaginal Vault Prolapse

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Abstract

Objective: To describe our experience with the outcome of surgical procedure -abdominal sacrocolpopexy in the treatment of vaginal vault prolapse occurring after hysterectomy.
Study design: Prospective observational study
Place and Duration: The study was carried out at obstetrics and gynaecology unit 'A', Khyber Teaching Hospital, Peshawar. From June 2011 to June 2016.
Methodology: A total of 14 consecutive patients presenting with post-hysterectomy vaginal vault prolapse were included. After preliminary workup, and informed consent abdominal sacrocolpopexy with prolene mesh was carried out in 12 cases while 2 patients refusing this procedure had vaginal repair without mesh.
Results: Mean age of the patients was 52.53 ± 7SD and ranged between 45-62 years. Majority 10(71.42%) developed vault prolapse within 5-10 years after hysterectomy. Six (42.85%) had previous surgery in this institution, others were referred cases. It occurred after vaginal hysterectomy in 8(57.15%) and after abdominal hysterectomy in 6(42.85%) patients. All patients had protrusion of vault, urinary symptoms including straining to urinate and incomplete bladder emptying in 9(64.28%), backache 3(21.42%), bowel symptoms in 3, ulceration and discharge 4(28.57%) and dyspareunia in 6(42.85%). Abdominal sacrocolpopexy was performed in 12(85.71%) and conventional vaginal repair in 2(14.28%). Peri-operative and postoperative complications were low, intraoperative bleeding more than 300-400ml in 2, UTI in 3 and recurrent prolapse in 1 patient after vaginal repair. Follow up at 6 weeks, 3 months, 6 months, and 1 year, all patients were satisfied with their surgery in terms of improvement in symptoms and quality of life.
Conclusions: Abdominal sacrocolpopexy is a safe and effective procedure for post-hysterectomy vaginal vault prolapse. It showed a particularly favorable result on prolapse related and functional complaints and a low rate of surgical complications. However larger studies and a longer follow up is recommended.
Key words: Vaginal vault prolapse, prolene mesh sacrocolpopexy, complications outcome, vaginal vault suspension.

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Introduction

Pelvic Organ Prolapse (POP) is a common problem affecting 30% to 50% of parous women and the prevalence increases with age and a number of patients require repeat surgery for recurrence .[1] The incidence of post-hysterectomy vaginal vault prolapse has been reported as 0.1% to 1% .[1,2] It can occur after

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abdominal or vaginal hysterectomy and follows 11.6% of hysterectomies performed for prolapse.[3]

Vaginal vault prolapse is a rare and often a distressing condition affecting quality of life by its local physical symptoms of vaginal bulge, urinary and or bowel symptoms, backache, pelvic heaviness and limitation of movement.[4] There may be dyspareunia, sexual dysfunction, vaginal skin gets ulcerated leading to discharge and sometimes bleeding.[4,5]

Vagina is a fibromuscular tube lined by epithelium and enveloped by endopelvic fascia. Its upper part is suspended by cardinal and uterosacral ligaments, while the middle and the lower parts by illeococygeous, pubococygeous, urogenital diaphragm and perineal body. Post hysterectomy vaginal vault prolapse is caused mainly by attenuation of the cardinal/uterosacral ligament complex and also separation from supporting fascia, and is often associated with cystocele and rectocele.[3]

Surgical correction of the post hysterectomy vault prolapse can be performed transvaginally or trans-abdominally and aims at re-establishment of the suspension by attaching the vaginal tube to a normal segment of cardinal/uterosacral ligament complex or by a procedure like sacrocolpopexy or sacrospinous ligament fixation.[6,7] It often involves reconstruction of vagina with repair of cystocele and rectocele transvaginally.[7]

Abdominal sacrocolpopexy is considered the gold standard. It is an effective treatment of vault prolapse with success rate of 88%-100% and is an ideal procedure in those with pelvic floor muscle weakness and shortened vagina that would not approximate to sacrospinous ligament.[3] Vaginal axis and depth can be restored by sacrocolpopexy with preservation of coital function and also reduction of irritative bladder symptoms.[8] The goal of this study was to describe our experience with the surgical procedure abdominal sacrocolpopexy with polypropylene mesh in treatment for vaginal vault prolapse occurring after hysterectomy.

Methodology

This prospective study was conducted in the Gynae-A unit of Khyber Teaching Hospital Peshawar from June 2011 to June 2016. All women presenting with post-hysterectomy vault prolapse were included. Patients having hysterectomy for malignant condition and complaining of prolapse and those refusing surgery were excluded. Vaginal vault prolapse was classified using Pelvic Organ Prolapse-Quantification System.[13] Stage 0-no decent of pelvic structure during straining, Stage I-leading edge of prolapse > 1cm above the hymenal ring, Stage II- leading edge of prolapse extending from 1cm above to 1cm below the hymenal ring, Stage III-leading edge 1cm below the hymenal ring but no further than 2cm less than TVL(total vaginal length) and Stage IV as vagina completely everted.

Data including age, indication for hysterectomy and time interval, presenting complaints, surgical procedure performed and outcome including perioperative and postoperative complications were recorded. Patients were followed up at 6 weeks then 3 monthly for at least one year. They were interviewed about bladder, bowel and sexual symptoms. Symptoms of persistent prolapse (vaginal lump or pressure perineum) were compared at 3 and 6 months. A digital pelvic examination was carried out for vaginal axis and depth and to see that vaginal apex was above pelvic floor and no segment of vagina below hymenal ring.

Abdominal Sacrocolpopexy. Patients were counseled for abdominal sacrocolpopexy with polypropylene mesh, complications associated with mesh use were explained. All the cases were performed by a single senior surgeon. Preoperative workup and investigations were done. Under general anesthesia, the patient was placed in trendlenberg position. Transabdominal approach was mainly by lower midline incision and in some by low transverse incision (as previous surgery was by that incision). Vaginal vault was identified and the covering peritoneum was excised. Anteriorly bladder was mobilized for 3-4cm and posteriorly rectum was separated along with the peritoneum. Next, the peritoneum over the sacral promontory was opened right lateral to Meso sigmoid and reflected laterally. The path of the ureter was identified and it was reflected laterally along with peritoneal flap. The incision in the peritoneum was continued across the right side of pelvis to the vaginal vault. A sterile piece of proline mesh about 11 x 4 cm prepared in y-shape and anchored over vaginal vault with at least 3 pairs of interuppted vicryl-0 sutures posteriorily and 1-2 pair sutures anteriorily and at vault placing suture through the mesh and fibromuscular thickness of vaginal wall. The mesh was placed across pelvis without tension and attached to the medial sacral ligament with 2-3 sutures. Peritoneum was closed over the mesh graft, drain was kept in the retroperitoneal space and abdomen was closed. Patients were catheterized for 24 hours and injectable antibiotics are given for 48 hours

as per ward protocol. Patients were discharged on 4th to 5th day and called for follow-up at 6 weeks and then 3 monthly for at least one year.

Data was analyzed using SPSS. Mean was calculated for quantitative variables like age and for qualitative variable frequencies and percentages were calculated.

Results

Fourteen patients with posthysterectomy vaginal vault prolapse included. The age ranged between 45-62 years with mean age 50.53 ± 7SD. Ten patients (71.42%) developed vault prolapse within 5-10 year of previous surgery. Vault prolapse occurred after previous vaginal hysterectomy in 8(57.15%) cases as shown in table-I.

Table-I: Demography and Presentation (n=14)

Variables	No. of patients	Percentage
Age: **Range**: 45-62 years **Mean**: 52.53± 7SD		
Previous surgery		
Abdominal hysterectomy	6	42.85
Vaginal hysterectomy	8	57.5
Indications for hysterectomy		
DUB	3	21.42
Fibroids	2	14.28
UV prolapse	8	57.15
Ovarian cyst	1	7.15
Presentation		
Prolapse vault	14	100
Urinary dysfunction	9	64.28
Pain / discomfort	3	21.42
Defecation symptoms	3	21.42
Ulceration / discharge	4	28.57
Dyspariunea	6	42.85
Duration of hysterectomy		
≤ 5 years	2	14.28
5-10 years	10	71.44
≥10 years	2	14.28

All the patients had symptoms of pelvic heaviness and protrusion of vagina,2 cases with stage II, 8 had stage III while 4 stage IV vault prolapse. Nine(64.28%) also had urinary symptoms. Other symptoms included pain and backache in 3(21.42%), pelvic discharge 4(28.57%) and dyspareunia in 6(42.85%).

Abdominal sacrocolpolexy with polypropylene mesh was performed in 12(85.71%) cases, while 2 patients refused mesh sacrocolpopexy hence vaginal repair was performed.

Table-II shows the outcome. Postoperative duration of hospital stay was 3-4 days. Two cases had adhesions in the pelvis, they were separated from vault, in these urine was blood stained but no rent in the bladder was found and managed by retaining catheter till microscopic haematuria stopped.

Intraoperative blood loss more than 300-400ml was observed only in 3(21.42%), 3(21.42%) had urinary tract infection and were treated with oral antibiotics. There was no case of wound infection or hematoma formation.

Table-II: Surgical procedure and complications (n=14)

Procedure	No of patients	Percentage
Abdominal sacrocolpopexy	12	85.72
Conventional vaginal repair	2	14.28
Complications		
Intraoperative bleeding > 300 ml	2	14.28
Urinary tract injury	0	-
Bowel injury	0	-
Urine retention	1	7.14
Post-op ileus	1	7.14
Wound infection	0-	
Urinary tract infection	3	21.42
Dyspariunea	1	7.14
Mesh erosion	0	-
Recurrent prolapse	1	7.14

Average follow-up was 6 months to 3 years, with no mesh erosion, urinary or bowel dysfunction. No patient complained of coital problems due to sacrocolpopexy. Only 1(7.14%) had recurrent vault prolapse after the vaginal repair and she then underwent sacrocolpopexy. Majority of the patients were satisfied with their surgical treatment.

Discussion

A vaginal vault prolapse is a rare event after hysterectomy and it represents a distressing condition for both the patient and the surgeon. During the study period, 14 women were operated for posthysterectomy vault prolapse comprising 0.52% of all gynecological surgeries. Only 6 of these patients had a hysterectomy in our hospital while the rest had hysterectomy elsewhere. The incidence of posthysterectomy vault prolapse has been reported in the literature as 0.1-1% and 0.4% .[2,9] Other studies reported as 4% on pelvic examination, as 11.6% after hysterectomy performed

for genital prolapse and 1.8% when it was performed for other benign diseases.[8,9] In our study 6(42.85%) had vault prolapse after abdominal hysterectomy and 8(57.15%) after vaginal hysterectomy. Reported risk of vault prolapse is 4.7 times higher in women where initial hysterectomy was indicated for prolapse.[10,11] In contrast, another study reported 88.2% cases of vault prolapsed after abdominal hysterectomy .[2]

The mean age of our patients was 52.53 ±7SD and ranged between 45-62 years, which is in accordance with other studies reporting age between 58.2 ± 5SD and 58 years.[10,12]

Vaginal vault prolapse is mostly a preventable complication of hysterectomy, with adequate suspension of the vaginal apex after hysterectomy with the cut ends of cardinal and uterosacrol ligaments.[11] Surgical repair also aims to create a new suspension with new vault support. Transvaginal sacrospinnous fixation and transabdominal sacrocolpopexy accomplish this .[12]

In our study, we performed abdominal sacrocolpopexy with prolenenon absorbable mesh in 12(85.71%) patients and vaginal repair in 2(14.29%) patients who refused abdominal repair and mesh placement. Sacralcolpopexy is a common procedure for the treatment of vaginal vault prolapse and is associated with low perioperative and post-operative severe morbidity.[13] The complication rate in our patients was like wise very low. Intraoperative heamorrhage in excess of 300-400ml occurred in 2(14.28%) because of adhensions in the pelvis. There was no incident of ureter, bowel or bladder injury. Only 3(21.42%) had post-operative urinary tract infection. Other authors have also reported low post operative complications and increased UTI as 20.3% and catheterization acting as the biggest risk factor.[13,14]

Only one (7.14%) patient in our study had recurrent vault prolapse after vaginal repair. There was no recurrent prolapse after sacrocolpopexy. Similar outcomes have been reported by other studies .[13,15] Abdominal mesh sacrocolpopexy has been reported as having 100% long term effectiveness with no reported case of recurrence in other local series as well.[16,17] Comparison of vaginal and abdominal techniques by different authors have shown abdominal procedure having better outcomes in terms of morbidity and recurrence.[16-20]

One of the complications is mesh erosion or infection requiring re-operation and overall incidence of mesh erosion is reported as 15% and 9%.[2,3] This has been attributed to multiple factors, use of large numbers of braided suture, placement of mesh at the apex and poor pre-operative estrogenisation.[21]Use of a single flap (thickness) mesh has been recommended to reduce the amount of foreign material at the vaginal vault and risk of erosion.[22] However no case of mesh erosion or infection was observed in our patients. New less invasive techniques of mini laparoscopic sacrocolpopexy and robotic sacrocolpopexy have comparable efficacy and decreased morbidity in terms of blood loss and hospital stay.[23,24] Colpocleisis, a vaginal obliterative procedure is an alternate procedure for elderly and medically frail due to less operative time and anesthesia.[25] These techniques were not used in our patients. On follow up patients reported satisfactory improvement of quality of life, prolapse related complaints were markedly diminished after sacrocolpopexy. Backache urinary and bowel dysfunction also improved and patients were satisfied with their treatment. However long term follow up is needed for realistic interpretations.

The main limitation of our study was the limited number of cases and a single unit study so the incidence of post-hysterectomy vaginal prolapse in our setup could not be commented upon. The patients were followed up for one year and recurrence is often underreported if long-term follow-up is not carried out.

Conclusion

Abdominal sacrocolpepexy with prolene mesh was found to be a safe procedure with low intraoperative and postoperative complications. It was associated with a high patient satisfaction in terms of prolapse related as well as function related symptoms cure. However long term follow-up is needed to look at the long-term outcome with emphasis on recurrence and other urogenital symptoms.

.References

1. Dellenbach PI, Kaelin-Gambirasio I, Jacob S, Dubuisson JB, Boulvain M. Pelvic Floor Dysfunction.IntUrogynecol J. 2008 ; 19(12): 1623-9.doi: 10.1007/s00192-008-0718-4.
2. DaneshShahraki A, Feizi A. Introducing an easy new surgical method for repairing vaginal vault prolapse. J Res Med Sci. 2012; 17 (spec 2): 8186-89.
3. Afifi R, Sayed AT. Post-hysterectomy vaginal vault prolapse. The Obstetrician &Gynaecologist. 2005: 7:89-97.
4. Kleeman SD, Karra MM. Vaginal vault Prolapse. In Rock JA, Jones HW, editors. Tel.inde's operative gynaecology. 10th ed. Philadelphia Lippincott. Williams &Walkins: 2008. 911-35.
5. Uzoma A. Farag KA. Vaginal vault prolapse.ObstetGynaecolInt 2009; 2009; 275621.

6. Maher CF, Feiner B, Decuyper EM, Nichlos CJ, Hickey KV, O'Rourke P. Laparoscopic sacral colpopexy versus total Vaginal mesh for vaginal vault prolapse: a randomized trial. Am J obestetgynecol 2011; 204(4):360-367.
7. Carter JE, Winter M, Mendehlson S, Saye W, Richardson AC. Vaginal vault suspension and enterocele repair by Richardson-SayeLaparoscopic technique. Description of training technique and results . JSLS. 2001;5:29-36.
8. Pilsgaard KI, Mouritsen I. Follow up after repair of Vaginal vault prolapsewith abdominal coloposacropexy. ActaobstetGynecolScand. 1999;78(1):66-70.
9. Marchionni MI, Bracco GI, Checcucci V, Carabaneanu A, Coccia FM, et al. True incidence of vaginal vault prolapse. Thirteen years of experience. J Reprod Med. 1999 ; 44(8):679-84.
10. Blandon RE, Bharucha AE, Melton LJ III, etal. Incidence of pelvic floor repair after hysterectomy; A population-based cohort study. Am J obstetGynecol 2007;197:664. El-b64.e7.
11. DallenbachP, Kaelin-Gambirasio I, Dubuisson JB, Boulvain M. Risk factors for pelvic organ prolapse repair after hysterectomy. Obstst Gynecol. 2007;110;625-32.
12. Unger CA, Walters MD, Ridgeway B, etal.Incidence of adverse events after uterosacralcolpopexy for uterovaginal and posthysterectomy vault prolapse. Am J obstetGynecol. 2015; 212:603.el-7.
13. J. Ivovic , D. Kljakic, S. Raicevic : Abdominal Colposacropexy With Permanent Polypropylen Mesh. The Internet Journal of Gynecology and Obstetrics. 2012 16(3). DOI: 10.5580/2c19
14. Chung CP, Kuehl TJ, Harris SK, etal. Incidence and riskfactors of post operativeuriuary tract infection after uterosacralligment suspension. IntUrogynecol J. 2012; 23:947-950.
15. Milani AI, Withagen MIJ, Vierhout ME. Trocarguided total tension-free vaginal mesh repair of post-hysterectomy vaginal vault prolapse. IntUrogynecol J. 2009: 20: 1203-11. DOI. 10. 1007/s00192-009-0924-8.
16. Choudhry A, Shukr I, Choudhry H, Bangash N, Jan S. Abdominal SacrocolpopexyVsSacrospinous Ligament Fixation fixation for vaginal vault prolapses. PAF MJ 2009 ; 59(4).
17. Yasmin S, Saeed S, Fatima N. Abdominal Techniques for surgical management of Vaginal vault prolapsed. J surg Pak 2010; 15(1):15-29.
18. Chaudhary SM. Sacrocolpopexy "Gold Standard" for vault prolapse: Medical forum 2007;18:24-27.
19. Svabik K, Martan A, Masata J, El-haddad R, Hubka P. Comparison of vaginal mesh repair with sarospinous vaginal colpopexy in the management of vaginal vault prolapse after hysterectomy in patients with levatorani avulsion: a randomized controlled trial. Ultrasound ObstetGynecol 2014; 43:365-371.
20. Gilleran JP, Zinumevan P. Abdomainal mesh sacrocolpopexy for recurrent triple compartment pelvic organ prolapse. Br J UrolInt 2009; 103(8); 1090-94
21. Kholi N, Walsh PM, Roat TW, Karram MM. Mesh erosion after abdominal sacrocolpopexy. Obstetgynecol 1998;92: 99-1004.
22. Tummons MC, Addnon WA. Mesh erosion after abdominal sacrocolpopexy. J pelvic surg 1997;1: 75-80.
23. Ferreira H, Ferreira C, Braga A, Pereira AT, Guimaraes S.Minilaparoscopicsacrocolpopexy for vaginal prolapse after hysterectomy. SurgTechnol Int. 2014 ; 25: 1571-61
24. Anand MI, Woelk JL, Weaver AL, Trabuco EC, Klingele CJ, Gebhart JB. Perioperative complications of robticsacrocolpopexy for post-hyserectomy vaginal vault prolapse. IntUrogynecol J. 2014 ;25(9):1193-200.
25. Hill AJ, Walters MD, Unger CA. Perioperative adverse events associated with colpocleisis for uterovaginal and posthysterectomy vaginal vault prolapse.Am J Obstet Gynecol. 2015 Oct 31.pii:S0002-9378(15)02226-7. Doi:10.1016/j.ajog.2015.10.921.