International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Sinha A et al. Int J Reprod Contracept Obstet Gynecol. 2025 July;14(7):2391-2394
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20251998

Case Report

When endometriosis returns: managing vault involvement after hysterectomy: a case report

Anuvi Sinha*, Tushar L. Rahane, Niteen Ghorpade

Department of Obstetrics and Gynaecology, Inspiria Laparoscopy and IVF Research Centre, Rahata, Maharashtra, India

Received: 05 May 2025
Accepted: 05 June 2025

***Correspondence:**
Dr. Anuvi Sinha,
E-mail: anuvisinha@gmail.com

ABSTRACT

Vault endometriosis is a rare but quite challenging condition occurring in post-hysterectomy patients. Minimally invasive surgery remains the gold standard for the diagnosis and management of such cases. We hereby present a case report of a 41-year-old lady who had undergone total laparoscopic hysterectomy 12 years ago and came with irregular vaginal bleeding since 7 to 8 years. She was thoroughly evaluated for the same and underwent biopsy of the growth over the vault, which was suggestive of endometriosis. Magnetic resonance imaging (MRI) was done to rule out involvement of the bladder and rectum. She underwent elective laparoscopic excision of an endometriotic nodule over the vault and bladder serosal shaving. Postoperatively patient was relieved of her signs and symptoms.

Keywords: Endometriosis, Vault, Vaginal bleeding, Nodule, Bladder, Bowel, Hysterectomy

INTRODUCTION

Endometriosis is a chronic inflammatory condition characterized by the presence of active endometrial tissue outside the uterus. The site of involvement includes the peritoneum, visceral layer of organs like uterus, ovaries, bladder, bowel, and also a few rare places like the diaphragm, lungs or surgical scar site. The overall incidence of endometriosis in reproductive age group women is around 6 to 11 percent. However, these numbers can be quite misleading, as many women remain unidentified due to its vague presentation and delayed diagnosis.[1] Deep endometriosis is a type of endometriosis involving more than 5 mm of visceral peritoneum in depth. It commonly occurs at the bladder, rectum, ureter, or vault. Deep endometriosis more often requires surgical management for the alleviation of symptoms related to it. For vaginal vault endometriosis, the exact mechanism of occurrence is not clear but it could be attributed to inadvertent deposition of endometrial tissue during vault excision at the time of hysterectomy or due to inadequate removal of endometriotic tissue at vault or uterosacral ligament, which over the time increases to cause symptoms associated with this condition. The patient presents with complaints such as irregular vaginal bleeding, pelvic pain, painful intercourse, pain during micturition or passing stools.[2] Here we present a rare case of vaginal vault endometriosis who presented with irregular vaginal bleeding after total laparoscopic hysterectomy done 12 years ago.

CASE REPORT

A 41-year-old lady with previous two normal vaginal deliveries came on 19 April 2025 to our center with irregular bleeding per vagina and pain in lower abdomen over 7 to 8 years. She had undergone a total laparoscopic hysterectomy 12 years ago for dysfunctional uterine bleeding at another hospital. She also had a history of left-sided nephrectomy for kidney donation 13 years ago. There were no significant complications, prolonged hospital stay, or need for blood donation after her previous surgeries. She didn't have any written/printed record of her prior surgeries, and our description is based on the history given by her orally. She was being evaluated elsewhere before coming to our center. All the reports were inconclusive with respect to her condition. On her arrival here, a detailed physical examination was done for her. On

per speculum examination, there was a dark, altered red mass of 3×4 cm at the center of the vault, which bled minimally on touch. Per vaginally the consistency of the mass was firm to hard with tenderness in pouch of Douglas (POD). Screening ultrasound was done in OPD, which showed a dense nodule in POD of 3×3 cm with bilateral ovarian endometrioma. Biopsy of the growth over the vault was done. The histopathological report showed evidence of endometriosis. To confirm the findings and planning the surgical approach, plain magnetic resonance imaging (MRI) pelvis was done with endometriosis approach. T2WT images with and without fat saturation were obtained in all 3 planes. 3-dimensional T1WT images with and without fat saturation were taken. The MRI report had the following findings.

Right ovary was visualized and showed a well-defined, thick-walled cystic lesion measuring approximately 5.6×5×5.7 cm in size with no internal solid components or papillary projections, volume: 85 cc. Features were suggestive of endometrioma.

Proximal rectum was seen adherent to posterior surface of right ovary for a length of 1.2 cm with its serosal involvement. Possible focal muscularis propria involvement was also noted.

Anteriorly right ovary was seen adherent to small bowel loops for a length of 24 mm with possible serosal adhesions.

Left ovary appeared mildly bulky (3.2×2.5×1.9 cm) with 3 small cyst within largest measuring 1.8×1.4 cm. No endometriotic deposits was seen in left ovary

Vaginal vault was observed.

A focal T1 hyperintense/T2 hypointense lesion was seen along the posterior aspect of the vaginal vault wall, measuring approximately 3.2×2.5×1.9 cm in size, showed mild enhancement with surrounding inflammatory changes, imaging features suggested a vaginal vault endometriotic deposit, and the vaginal vault endometriotic deposit was seen adherent to right ovarian endometrioma with surrounding moderate inflammation.

No ascites or lymphadenopathy was noted.

CA-125 was done which was found to be 35 IU/ml.

The patient was posted for laparoscopic excision of vault endometriosis. 4 port entry was made. Dense omental adhesions were present at vault. Bilateral ovaries showed endometrioma of 3×4 and 4×5 cm on right and left side respectively. Congenital adhesions of sigmoid colon were released . Adhesiolysis was done. Ureterolysis was done. Bilateral salphingo-ophrectomy was done. Vaginal tube was introduced from introitus. Bladder was separated from wall and pushed down. Rectum was separated and pushed down. Excision of endometriotic nodules of 3×3 cm was done from vault. Endometriotic deposits were seen over bladder wall upto left paravesical space.

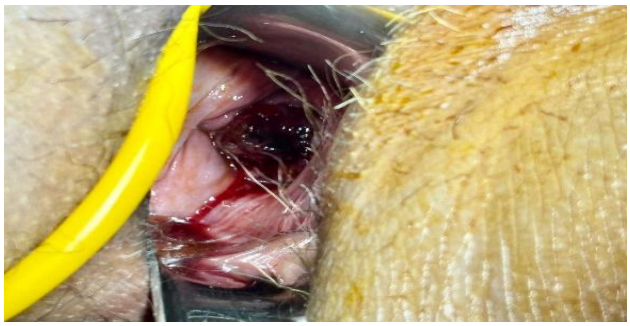

Figure 1: Endometriotic nodule over vault.

Figure 2: USG findings 3×4 cm nodule.

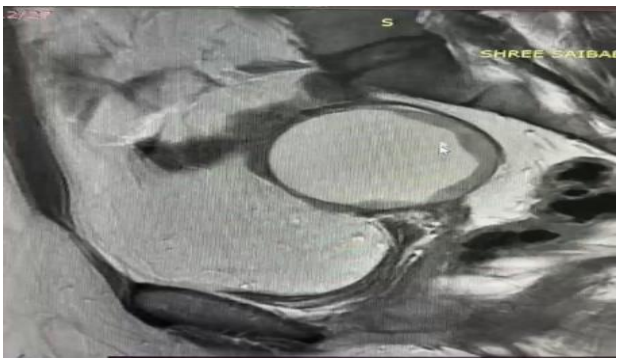

Figure 3: Vault nodule.

Figure 4: Bladder serosal shaving with vault involvement.

Cystoscopy was done where no mass was seen within bladder cavity. Bladder shaving was done and serosal layer of bladder was closed in a single layer with barbed V-Loc 3.0 (synthetic absorbable unidirectional barbed suture prepared from a synthetic polyester composed of glycolide, dioxanone, and trimethylene carbonate). All specimens were removed through vault. Vault closure was done by barbed V-Loc no.1. Sample was sent for histopathological examination (HPE). Hemostasis was checked. Pneumoperitoneum was released. Ports were closed.

Postoperative period was uneventful. Foley's catheter was removed on post-operative day 5.

The patient was discharged on post-operative day 6 and was asked to follow up in OPD after a week where she had no complaints and was asymptomatic. The HPE report showed evidence of endometriosis with microscopic section showing presence of endometrial glands and stroma along with multiple areas of hemorrhage.

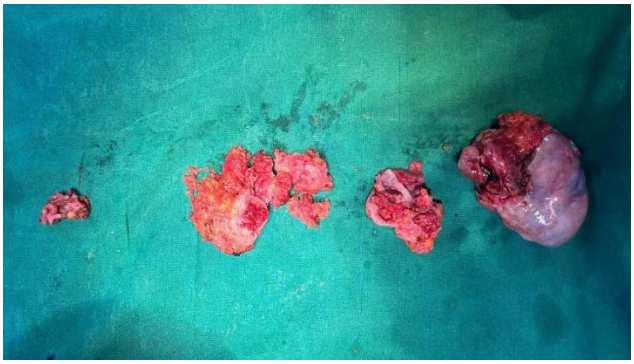

Figure 5: Vault and cystwall specimen for histopathological examination.

DISCUSSION

Vault endometriosis, being a rare condition, has no surgical management guidelines at present. Few case reports and series have provided evidence for need of primary surgical management in these cases. Laparoscopic surgery remains the mainstay for diagnosis, assessment and treatment of the condition. The surgical steps done in the above case were almost the same as performed by Limbachiya et al in their study with addition to resection of endometriosis tissue from bladder surface and paravesical space.[2]

The surgery for vault endometriosis can be very challenging because of the presence of dense adhesions due to both endometriosis and previous surgery. Moreover, attempt of medical management in such cases can increase the fibrosis and adhesions without any actual alleviation of the macroscopic disease. The history narrated by the patient in our case gave no complaints related to endometriosis prior to her hysterectomy surgery. Also, her ovaries were left behind in the first surgery. It can be attributed that there might be foci of endometriosis in the ovaries as well as peritoneum which was left behind or went unnoticed in primary surgery. As found in study done by Choi et al, if the patient has no history related to endometriosis then development of disease after the hysterectomy has etiology lying in removal of adenomyotic uterus with deposition of secretory phase endometrium at the vault which multiples and spreads over the time.[3] This is one of the iatrogenic cause of development of endometriosis. Yoga et al stressed on post-operative use of gonadotropin agonists/antagonists for 3 months for suppression and prevention of recurrence of disease but this needs to be studied more with long term follow up with patients.[4] Markhani et al reported development of fistulous tract to the vault from the endometriotic ovaries left behind after hysterectomy leading to development of vault endometriosis. Few cases have also reported to incomplete excision of ovaries leading to remnant ovarian syndrome in endometriosis leading to above condition. Thus we see that origin of vault endometriosis also is multifactorial. The differentials of post hysterectomy bleeding include atrophic vaginitis, vaginal vault granuloma or carcinoma, infilterating ovarian carcinoma, cervical stump carcinoma, vaginal carcinoma, prolapsed fallopian tubes, fallopian tube carcinoma or estrogen secreting tumour elsewhere in the body.[5] These patients usually present with irregular vaginal bleeding with or without infectious discharge, cyclical or non-cyclical pelvic pain and dyschezia or painful micturition depending on site of visceral organ involvement. The mainstay of diagnosis remains imaging either in the form of ultrasound or MRI. Ultrasound remains the first line imaging modality in pelvic endometriosis. Trans vaginal sonography (TVS) detects POD nodules, ovarian endometriomas, bladder nodules as well as deep colonic nodules with high specificity and sensitivity. However, it is highly observer dependent. Trans rectal ultrasonography (TRUS) detects involvement of rectosigmoid area but is not useful for other anatomical sights. MRI is highly accurate in prediction of endometriosis and is used as additional tool. It is commonly used for prediction of extrapelvic diseases. MRI helps in knowing the extent of the disease and is useful before planning the surgery.[6]

The mean time of development of symptoms was longer in our study which could also indicate towards effect of lifestyle in development of endometriosis. More studies need to be done in this aspect for further affirmation. All the surgical steps should be standard when dealing with such cases with adhesiolysis of bowels, dissection of ureter, opening up of the retroperitoneal spaces and excision of all macroscopic disease. This includes shaving off of any superficial bladder or rectal serosal surfaces. In case of deeply infilterating cases there might arise need of bowel resection and anastomosis or bladder reconstruction with or without uretric reimplantation. The vault should have a disease free margin of atleast 1-2 cm so that recurrence can be prevented.[7]

CONCLUSION

Vault endometriosis being a rare condition can be quite challenging. Proper history taking, physical examination and imaging needs to be done before the operation. Minimally invasive surgery remains the gold standard for diagnosis and management of the disease. In such cases of deep endometriosis, the role of medical management becomes negligible and is worth wasting patient's valuable time. Surgery remains the mainstay management of such condition.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Sinha A, Rahane TL, Ghorpade N. When endometriosis returns: managing vault involvement after hysterectomy: a case report. Int J Reprod Contracept Obstet Gynecol 2025;14:2391-4.