Section: Obstetrics and Gynaecology

Case Series

CLINICAL CHARACTERISTICS AND MANAGEMENT OUTCOMES OF VULVOVAGINAL CYSTS: A CASE SERIES

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Received : 07/11/2025
Received in revised form : 22/12/2025
Accepted : 10/01/2026

Keywords:
Vulvovaginal cyst, Mullerian remnant cyst, Bartholin cyst.
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DOI: 10.47009/jamp.2026.8.1.64
Source of Support: Nil,
Conflict of Interest: None declared
Int J Acad Med Pharm
2026; 8 (1); 338-341

ABSTRACT

Vulvovaginal cysts are uncommon, often asymptomatic lesions that may arise from congenital remnants, trauma, or glandular obstruction. Though typically benign, they can occasionally present with diverse symptoms such as dyspareunia, vaginal discomfort, or compression-related urinary and rectal complaints. Their true incidence is likely under-reported due to their subtle or asymptomatic presentation. We present a case series of patients with various types of vulvovaginal cysts managed at our institution, with emphasis on their clinical features, surgical intervention, and histopathological findings.

INTRODUCTION

Vulvovaginal cysts are uncommon lesions that arise from congenital remnants, trauma, or glandular obstruction and are frequently detected incidentally during routine Gynaecological examinations. These cysts are usually benign and asymptomatic but may present with diverse clinical symptoms including a palpable mass, dyspareunia, vaginal discomfort, or, in rare cases, urinary or rectal symptoms due to compression of adjacent structures. Their incidence is often underestimated due to their asymptomatic nature and the likelihood of underreporting.[1] Vulvovaginal cysts are fluid-filled sacs or lumps that can develop in or around the vaginal walls and vulva. Vulvovaginal cysts are classified based on their location, cause, and the type of tissue involved. Understanding the different types is important for proper diagnosis and treatment. These can be classified as either congenital or acquired. Müllerian cysts, the most common type of congenital cyst of embryological origin, account for up to 40% of cystic masses.[2,3] Acquired are formed as a result of injury, blocked glands, or developmental anomalies. Most commonly encountered vaginal cyst are Bartholin cyst, Gartner cyst, Inclusion Cyst (Epidermal Inclusion Cyst) and Müllerian Cyst. In this case series, we present multiple patients with different types of vulvovaginal cysts managed at our institution, highlighting the clinical presentation, diagnostic modalities, surgical management, and histopathological outcomes. This report aims to contribute to the existing literature by consolidating experiences in managing these varied lesions and emphasizing the need for clinical vigilance and individualised care.

Case 1

An 18-year-old female presented with complaints of a sensation of heaviness and a mass protruding from the vaginal area for the last one year. According to the patient, the swelling was initially small but gradually increased in size over a period of six months. She reported a feeling of heaviness and discomfort, particularly while walking and performing routine daily activities.

On clinical examination, a 5 × 6 cm cystic, fluctuant, sessile, and non-tender swelling was observed arising from the clitoral region. [Figure 1] There were no sign of tenderness, inflammation, or secondary changes noted on inspection or palpation.

Following preoperative evaluation, the patient was scheduled for surgical excision of the cyst. Saddle block anaesthesia was administered, and the patient was positioned in dorsal lithotomy after proper antiseptic preparation and draping. A cystoscopy was initially performed to rule out any involvement of the urethra or adjacent structures. A curvilinear incision was made at the mucocutaneous junction beneath the swelling, allowing for complete excision. Clitoral reconstruction was performed post-excision.

Histopathological examination, [Figure 2] of the excised tissue confirmed the diagnosis of an epidermal inclusion cyst.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

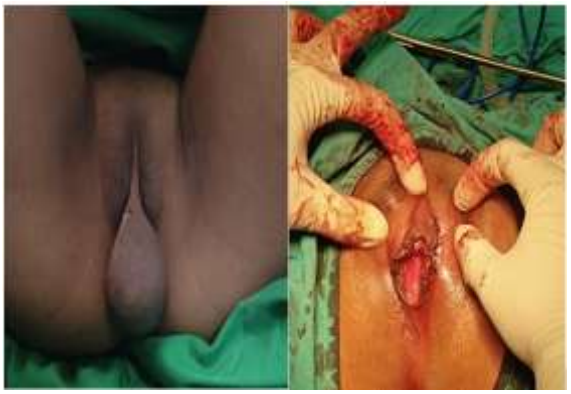

Figure 1: Epidermal Inclusion Cyst

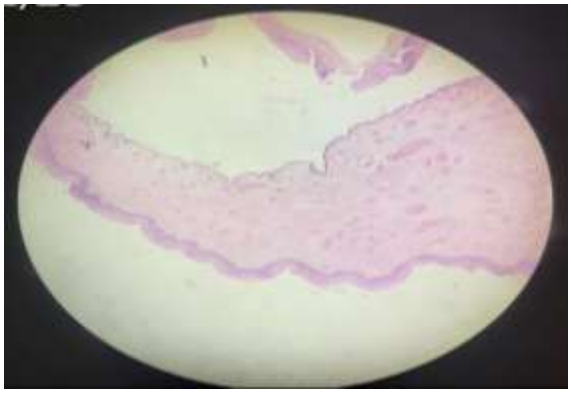

Figure 2(a): 4x - Section examined shows tissue partly lined by stratified squamous epithelium and partly lined by cuboidal epithelium

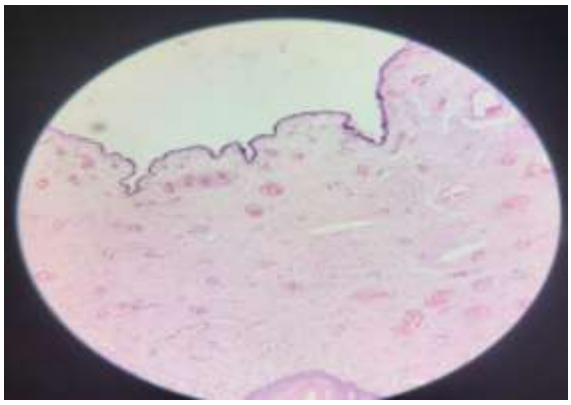

Figure 2(b): 10x – Underlying tissue shows fibrocollagenous tissueand dilated and congested blood vessels

Case 2

A 45-year-old perimenopausal woman (P2L2) presented to the gynaecology outpatient department with complaints of a mass protruding from the vagina and a sensation of vaginal heaviness. She reported no urinary symptoms such as dysuria or burning micturition.

On examination, a 4 × 4 cm cystic mass was identified on the left anterolateral vaginal wall. [Figure 3] Perineal ultrasonography was performed to assess the lesion and evaluate any extension into the urethra.

After detailed counselling, the patient was scheduled for surgical excision of the cyst. In the operating room, cystoscopy was carried out to exclude urethral involvement. Hydro-dissection was performed by injecting saline superficially around the lesion. Dissection of the cyst wall from the vaginal wall was facilitated by applying counter-traction using a gauze-wrapped finger.

During the procedure, the cyst ruptured, releasing green mucinous fluid and resulting in the loss of the dissection plane. Despite this, the remaining cyst wall was excised, and marsupialization was performed to manage the residual cavity. The excised tissue was sent for histopathological examination. [Figure 4]

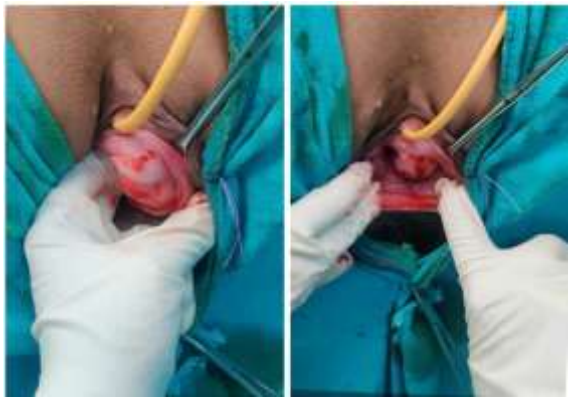

Figure 3: Squamous inclusion cyst

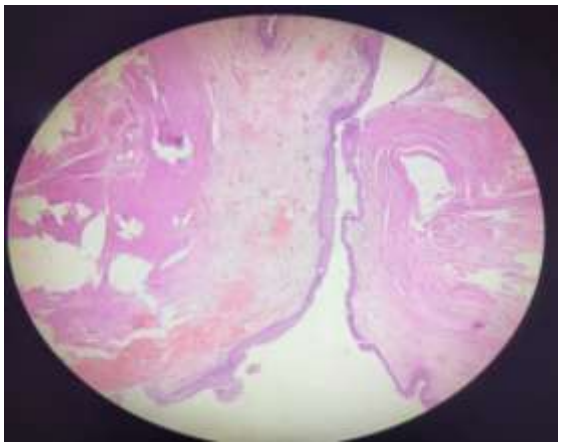

Figure 4(a): 4x – Section examined shows tissue partly lined by stratified squamous epithelium

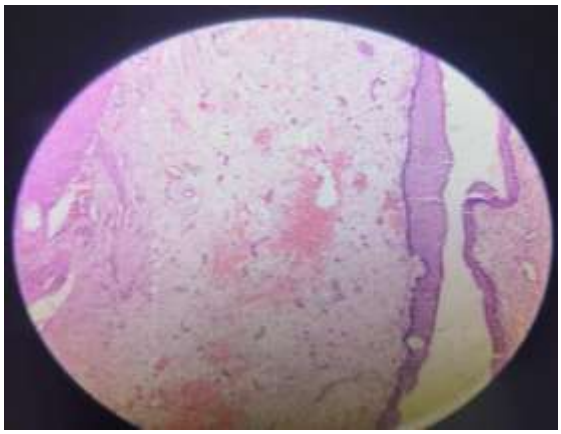

Figure 4(b): 10x – Underlying tissue shows hemorrhage, fibrocollagenous tissue and dilated and congested blood vessels

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Case 3

A 35-year-old female, Para 2, live 2 (P2L2), presented to the Gynaecology Outpatient Department with complaints of vaginal discomfort, dyspareunia, and a swelling near the vaginal introitus that had persisted for the past one year. The patient had previously consulted a local practitioner and was prescribed a course of oral antibiotics, which failed to provide symptomatic relief. On clinical examination, a 3×3 cm cystic, non-tender, and compressible swelling was noted on the right side of the vaginal introitus suggestive of bartholin cyst. [Figure 5] The lesion appeared benign in nature. Despite reassurance, the patient remained symptomatic and expressed a strong preference for surgical excision due to persistent discomfort.

After a complete preoperative assessment and informed consent, the patient was taken up for surgical management. Under aseptic conditions, the area was painted and draped, and normal saline was injected into the subcutaneous plane to facilitate hydro-dissection. An anatomical plane was carefully created between the vaginal wall and the cyst wall. Both blunt and sharp dissection techniques were employed to achieve complete excision of the cyst. A 3×3 cm cyst was removed in toto. On cut section, the cyst contained dark, altered colour fluid. The excised cyst wall was sent for histopathological examination (HPE) to confirm the diagnosis and rule out any malignant pathology. [Figure 6]

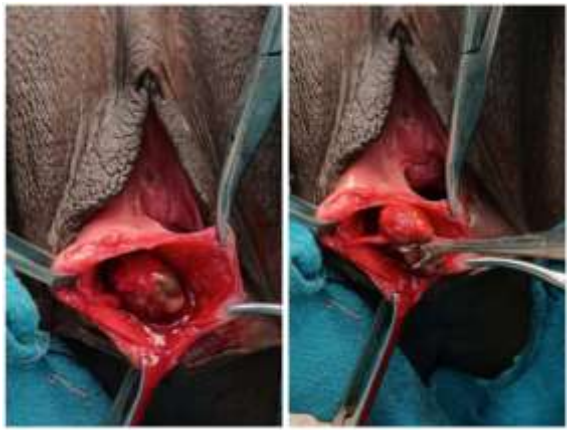

Figure 5: Infected Bartholin Cyst

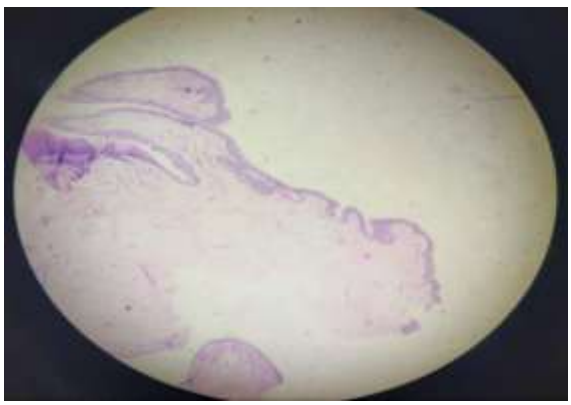

Figure 6(a): 4x – Section examined shows tissue lined by ciliated stratified columnar epithelium

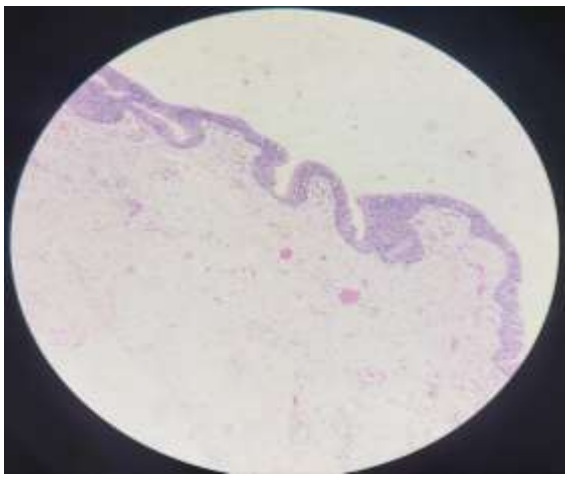

Figure 6(b): 10x – Section examined shows tissue lined by ciliated stratified columnar epithelium

Case 4

52 years Para 4 Live 4 postmenopausal women attended the GOPD with complaint of swelling in right vulva. She had the swelling since 2years which has increased to current size. On examination a 6*5 cm cystic, fluctuant and compressible swelling was seen occupying whole of the right vulva. [Figure 7] She was planned for vulvovaginal cyst excision under anaesthesia. Incision was given at mucocutaneous junction. The cyst was then dissected from vaginal wall using hydrodissection techqniue. The cyst wall ruptured while doing dissection because of thin wall and green mucinous content was drained. The cyst wall was then excised and the tissue left at base was marsuplised. The cyst wall then sent for HPE suggestive of mullerian remnant cyst. [Figure 8]

Figure 7: Right vulval cyst

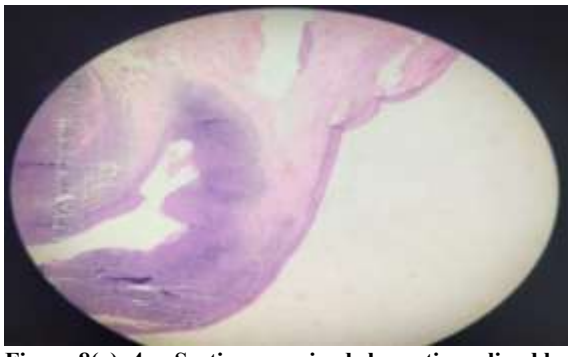

Figure 8(a): 4x - Section examined shows tissue lined by stratified squamous epithelium

ISSN (O): 2687-5365; ISSN (P): 2753-6556

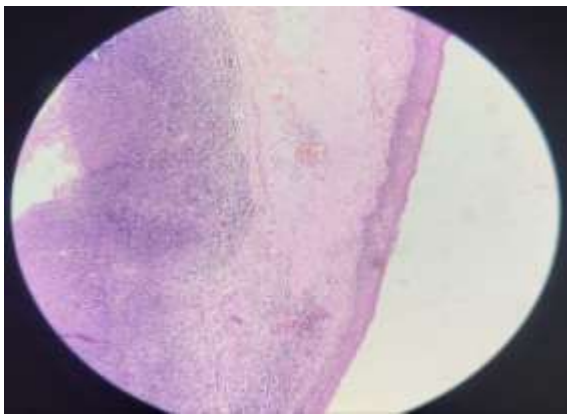

Figure 8(b): 10x – Underlying tissue shows fibrocollagenous tissue, chronic inflammatory cell infiltrate and dilated and congested blood vessel

DISCUSSION

Vaginal cysts are uncommon, typically benign lesions that are often asymptomatic and discovered incidentally during routine pelvic examinations. Most being asymptomatic and incidentally discovered during pelvic examinations, though some can present with local discomfort, dyspareunia, or obstructive symptoms depending on their size and location.[4,5] However, their presentation can vary depending on the type, size, and location of the cyst, as well as the patient's age and sexual history. In this case series, we presented diverse cases of vaginal cysts, including inclusion cysts, Bartholin gland cysts and Müllerian cysts, highlighting their clinical presentation, diagnostic approach, and management strategies. Among the types encountered, epidermal inclusion cysts were the most common. These typically arise after trauma or surgical procedures like episiotomy and are lined by squamous epithelium.[6] They are lined by stratified squamous epithelium and filled with keratin debris. Typically located in the posterior vaginal wall, they are slow-growing and usually asymptomatic unless infected or large in size.[7] Gartner's duct cysts, which originate from remnants of the mesonephric duct, were observed in women of reproductive age and usually located along the anterolateral vaginal wall.[8] Transvaginal ultrasound and MRI are valuable in distinguishing these cysts from other pelvic pathology.[9] Bartholin gland cysts arise due to obstruction of the duct of the Bartholin gland, typically located at the 4 and 8 o'clock positions of the vulvar vestibule.[10] These cysts may be asymptomatic or present with pain and swelling, especially if secondarily infected, leading to abscess formation. Treatment ranges from conservative management for small, asymptomatic cysts to surgical options such as marsupialization, Word catheter placement, or complete excision for recurrent or complicated cases.[11] Müllerian cysts originate from remnants of the paramesonephric duct and can occur anywhere along the vaginal canal.[12] Accurate diagnosis often begins with a pelvic examination and is supplemented by imaging modalities such as transvaginal ultrasound or MRI to determine the cyst's location, size, and origin. Definitive diagnosis requires histopathological analysis after surgical excision. Most vaginal cysts are benign, and malignancy is exceedingly rare, though possible, particularly in recurrent or atypical cysts.[13]

CONCLUSION

Vaginal cysts, though uncommon, encompass a wide spectrum of benign lesions that vary in their embryological origin, clinical presentation, and management. Surgical excision not only provides definitive diagnosis through histopathological evaluation but also relieves symptoms and prevents recurrence. Furthermore, this case series emphasizes the need for individualized patient management, taking into account factors such as symptom severity, cyst size, and patient preferences. This case series reinforces the need for clinicians to be aware of the variable presentations and origins of vaginal cysts to guide appropriate workup and management. Although malignant transformation is rare, careful evaluation is crucial, particularly in postmenopausal women and cases with atypical features.

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ISSN (O): 2687-5365; ISSN (P): 2753-6556