Thinking Beyond the Cyst: Vulvar endometriosis mimicking a recurrent Bartholin's Gland Cyst – A Case Report

Abstract

Background

Vulvar endometriosis is an uncommon presentation of endometriosis in which endometrial glands and stroma are present within the vulva tissues. Since it may present as a localized vulvar mass, it can be mistaken for more common conditions such as a Bartholin's gland cyst or abscess, epidermal inclusion cysts or other benign vulvar lesions.However, a vulvar mass that exhibits cyclical pain, fluctuates in size, or bleeds in tandem with the menstrual cycle should immediately raise suspicion for ectopic endometrium.

Case Presentation

A 32 -year-old G3P3 woman presented with a 2-year history of intermittent painful swelling in the left vulvar region. The symptoms were cyclical with exacerbation during menstruation. She had two episodes when these swellings burst on their own and discharged brownish to chocolate colored fluid. She had two incision and drainage procedures for presumed diagnosis of Bartholin's gland cyst. On examination, a 7cm tender, irregular, predominantly cystic mass was identified in the left labia, extending into the vagina and posterior fourchette. The initial clinical diagnosis was Bartholin's gland cyst or Bartholin's gland abscess . Imaging with ultrasound demonstrated a cystic mass with homogeneous low-level internal echogenicity without internal septations, papillary projections, or demonstrable internal vascularity on color Doppler imaging. The lesion was managed by excision. She was discharged on combined oral contraceptives. Her postoperative course was uncomplicated and at three months of follow up , she reported no symptoms and no evidence of recurrence.Histopathology confirmed the diagnosis of vulvar endometriosis.

Conclusion

Vulvar endometriosis should be considered in any woman with a recurrent or cystic vulvar swelling that is painful or changes with the menstrual cycle. Excision is preferred over simple drainage .Histological examination of excised or drained tissue is essential to make the diagnosis.

Keywords: vulvar endometriosis Bartholin's gland cyst; vulvar mass; extra pelvic endometriosis; histopathology; case report

Introduction

Endometriosis is a benign, estrogen-dependent condition characterized by the presence of endometrial glands and stroma outside the uterine cavity(1,2).While it most frequently affects pelvic structuressuch as ovaries, uterosacral ligaments, pelvic peritoneum, and rectovaginal septum, extrapelvic involvement can occur in almost any organ system. Vulvar endometriosis remains a rare clinical entity, accounting for a very small fraction of extrapelvic cases(3).

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Pathologically, vulvar endometriosis is categorized as either primary or secondary. Secondary lesions develop following localized surgical or obstetric trauma, such as episiotomies, perineal laceration repairs, or surgical interventions that inadvertently transplant endometrial cells into the vulvar tissue. Conversely, primary vulvar endometriosis develops spontaneously in the absolute absence of previous local surgery or perineal trauma(4). The condition may be clinically difficult to distinguish from other vulvar lesions, especially when the presenting feature is a localized mass.

Because the clinical presentation typically mimics benign vulvar lesions, a Bartholin's gland cyst or abscess is the most frequent diagnosis. However, a vulvar mass that exhibits cyclical pain, fluctuates in size, or bleeds in tandem with the menstrual cycle should immediately raise suspicion for ectopic endometrium. This report describes a unique case of primary vulvar endometriosis that closely mimicked a Bartholin's gland cyst and emphasizes the clinical nuances necessary to achieve an accurate, timely diagnosis.

Case Presentation

A 32-year-old G3P3003 woman presented to our gynecology department with a 2-year history of an intermittent swelling in the left vulvar region, which she first noticed in early 2024. The patient described a dull, throbbing pain within the swelling that escalated drastically during her menses. She also reported progressive, severe dysmenorrhea and deep dyspareunia during all her cycles, managing these symptoms with oral indomethacin.

She denied experiencing fever, abnormal uterine bleeding, or urinary and bowel symptoms. Notably, she reported two distinct episodes in 2025 where the mass spontaneously ruptured, discharging a dark brownish, chocolate-like fluid mixed with old blood, which led to temporary symptom relief. In March and December 2025, she underwent two incision and drainage procedures at a district hospital under the presumptive diagnosis of a Bartholin's abscess. However, the mass and its cyclical symptoms recurred within two months of the procedures.

Her obstetric history revealed three uncomplicated, full-term vaginal deliveries. She had no history of episiotomy, perineal lacerations, pelvic surgeries, or direct vulvar trauma.Menarche was at age 13 and cycles were regular, every 26 days, lasting 4–5 days. She was not using hormonal contraception. She had no significant medical history. There was no family history of endometriosis or gynecological malignancies.

Clinical Examination

General examination revealed an anxious but otherwise well appearing woman. Vital signs were stable with a blood pressure was 124/67 mmHg, pulse was 78 beats per minute, and the respiratory rate was 16 breaths per minute. Abdominal examination was unremarkable.

On local inspection of the perineum, a 7-cm, poorly defined, irregular mass was identified on the left labium majora. The mass extended into the vagina, partially obliterating the vaginal introitus and extending toward the posterior fourchette. On palpation, the lesion was mobile, soft to cystic, fluctuant, and highly tender. There was no active ulceration, overlying skin erythema, active purulent discharge, or palpable inguinal lymphadenopathy.Speculum examination was not possible due to the mass obliterating the introitus. There were no significant findings on rectal examination.

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Investigations

Routine laboratory investigations, including full blood count, renal function tests, liver function tests and urinalysis, were all within normal reference ranges. A transabdominal ultrasound revealed a normal-sized uterus with a homogeneous myometrium, a thin endometrial stripe, and completely unremarkable adnexa bilaterally, showing no signs ovarian endometriomas.A transvaginal scan was difficult to do due to the vulva pain.

A vulva dedicated ultrasound demonstrated a 6.5-cm, thick-walled cystic mass located in the left labia majora, extending directly into the Bartholin's gland anatomical space. The fluid within the cyst demonstrated fine, homogeneous low-level internal echogenicity without internal septations, papillary projections, or demonstrable internal vascularity on color Doppler imaging. Given the anatomical location, these findings were clinically interpreted as highly suggestive of a complex Bartholin's gland cyst, with epidermal inclusion cyst, localized vulvar hematoma, and benign soft-tissue tumor considered as secondary differentials.

Treatment

The patient was scheduled for complete surgical excision under spinal anesthesia. Intraoperatively, the mass was found to comprise three deeply situated, interconnected, well-circumscribed cystic locules within the vulvar soft tissue, notably free from dense adhesions to the surrounding structures*(see figure 1)*. During careful dissection, one of the tense cysts accidentally ruptured, draining thick, odorless, chocolate-colored fluid. *(see figure 2)*. We irrigated the operating field after the spillage. The entire cystic mass was excised with clear surgical margins. The resulting dead space was closed in layers using absorbable sutures, and meticulous hemostasis was achieved without difficulty.(*see figure 3*).The Bartholin gland was not identified separately. Gross inspection of the cut specimen revealed mixed solid and cystic areas containing thick, altered blood and thick walls.*See figure 4*).The specimen was fixed in 10% formalin and submitted for histopathological examination.

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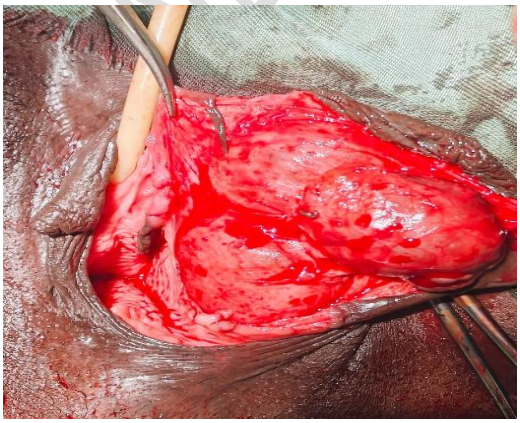


Figure 2:Intraoperative view of the left vulva mass before excision

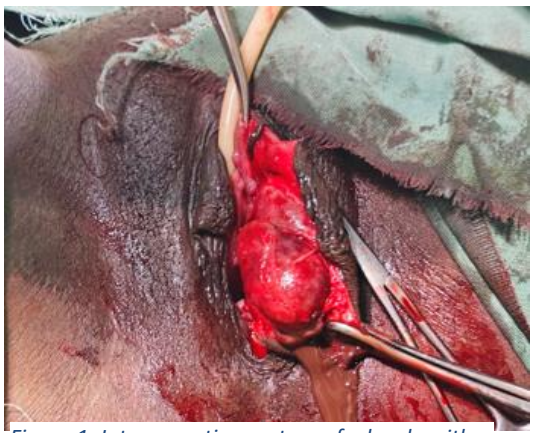


Figure 1: Intraoperative rupture of a locule with chocolate-colored fluid



Figure 3: Operative field after excision and layered closure



Figure 4: Cut surface of the specimen showing mixed solid and cystic areas with altered blood.

The patient's postoperative course was uncomplicated. She was discharged on postoperative day three with a three months course of combined oral contraceptives. Hormonal therapy was given to suppress ovulation, lower estrogen-driven stimulation, and reduce the risk of disease or symptom recurrence. At her 4-week postoperative review, the vulvar surgical site had healed completely with excellent cosmetic results. The patient reported a complete resolution of her focal vulva pain and a total absence of swelling or dyspareunia. At her 3-month follow up visit, she had no clinical or sonographic evidence of local recurrence. Given her resolution , strong desire to get pregnant and to avoid systemic hormones, the oral contraceptives were stopped, and she was continued on analgesia to control dysmenorrhea and also advised to undergo regular clinical surveillance.

At the 4 weeks post operative follow-up, the surgical site had healed well. The patient reported complete resolution of vulvar pain and complete absence of swelling. At the 2 months followup visit , there was no clinical evidence of recurrence requiring further treatment

Histopathological Findings

Microscopic examination revealed benign endometrial glands lined by pseudostratified columnar epithelium.Endometrial glands and stroma were identified within the fibroadipose vulva soft tissue.The glands were associated with hemosiderin depositionand chronic inflammatory infiltrates. There was no evidence of cytological atypia, malignancy, or other neoplastic transformation.Bartholin gland tissue acini, ducts and lining epithelium were absent. The surgical margins were free. Immunohistochemistry was not dome . Histopathological findings confirmed the diagnosis of vulva endometriosis.

Discussion

Classification and pathogenesis

Vulvar endometriosis is an uncommonly reported manifestation of extra-pelvic endometriosis(5). Clinically, it is classified as either primary or secondary, with most cases being secondary. Secondary lesions are generally associated with previous surgery, obstetric trauma, episiotomy, or perineal

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repair(6).In one systematic review, approximately 95.3% of patients presenting with vulvo-perineal endometriosis had a clear surgical history, such as episiotomy, perineal trauma, vaginal lacerations, or prior pelvic surgery(3).In contrast, primary vulvar endometriosis occurs without a history of local surgical manipulation or trauma, making the diagnosis more challenging.

The origin of such lesions is unresolved. Proposed mechanisms include lymphatic or hematogenous spread of endometrial cells; coelomic metaplasia of pluripotent cells in vulvar tissue under cyclic hormonal influence; and migration of endometrial tissue from the pelvis along the round ligament through a patent canal of Nuck (7,8). A single case cannot show which of these.While microtrauma without lacerations during the previous deliveries cannot be ruled out , her presentation may favor the lymphatic or vascular dissemination theory although the pathogenesis remains unresolved. The two incisions and drainages may also have contributed to the recurrence.

Diagnostic delay and the Bartholin's gland cyst pitfall

The variable clinical presentation of vulvar endometriosis leads to significant diagnostic delays, with patients frequently enduring years of mismanaged symptoms(9). While a painful, cyclical vulvar mass that undergoes catamenial swelling is highly pathognomonic, these classic cyclical findings are missing or subtle in many patients(10). Some lesions may have a blue or red appearance due to repeated hemorrhage. The absence of cyclical symptoms does not exclude the diagnosis(11).However, two features should have raised the question earlier: chocolate-colored discharge at two spontaneous ruptures, and recurrence within two months of each incision and drainage.A recurrent Bartholin's "cyst" in a woman of reproductive age, particularly one with cyclical pain, should be biopsied or excised with histology rather than drained.

The location of our patient's lesion , deep within the posterior left labia majora perfectly mimicked a Bartholin's gland cyst, a pitfall well-documented in literature when pelvic masses develop in proximity to the vestibular glands(12).Other important differentials to rule out include lipomas, hidradenitis suppurativa, epidermal inclusion cysts, and soft-tissue sarcomas. Malignancy, including clear cell carcinoma arising in endometriosis, must be considered when a lesion is fixed, ulcerated, rapidly enlarging or occurs in older women. No such features were present here, and histology showed no atypia.

Imaging

Ultrasound helps to show whether a mass is cystic or solid, but its findings are easily misread. Endometriomas typically show a thick wall and homogeneous low-level internal echoes (ground-glass appearance) caused by degraded blood, and in our patient this pattern was interpreted as a complex Bartholin's cyst. The ultrasound also reported no septations, whereas surgery showed three interconnected locules, which indicates that ultrasound can underestimate internal architecture in a mass of this kind. MRI gives excellent soft-tissue contrast and can map deep, extensive or recurrent lesions, but it was not available to us. In similar settings, high-quality trans labial or transperineal ultrasound by an experienced operator, and tissue sampling of any recurrent lesion, are practical alternatives. Imaging cannot replace histology for the diagnosis (13)

Complete local surgical excision with wide margins is universally accepted as the treatment of choice for localized vulvar endometriosis. Wide excision ensures the removal of all functional stroma, provides

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tissue for definitive diagnosis, and dramatically minimizes the risk of local recurrence(14).In our patient, one locule ruptured during dissection.Spillage may leave residual tissue and could increase the risk of recurrence, so she needs continued follow up.Hormonal suppression (progestins, combined oral contraceptives or GnRH agonists) can be used as an adjunct or alternative, and is best reserved for extensive or deep disease, incomplete resection or coexisting pelvic endometriosis. Treatment should be individualized to age, fertility wishes, symptom severity, lesion extent and patient preference after counseling. Treatment should be individualized according to the patient's age, fertility wishes, symptom severity, lesion extent and patient choice after counselling(15)(16)(17).We gave our patient a two-month course of a combined oral contraceptive as an adjunct.

Recurrence may occur, particularly following incomplete excision or in the presence of residual endometriotic tissue. Long-term follow-up is therefore appropriate, especially for patients with persistent cyclical symptoms or a history of recurrent disease. Although malignant transformation of endometriosis is uncommon, any rapidly enlarging, atypical, or recurrent lesion should be assessed carefully(18).

Limitations and lessons

This is a single case. Follow-up was short and cannot show whether the lesion will recur, particularly as the lesion returned within two months of earlier drainage. Pelvic endometriosis was not excluded by MRI or laparoscopy. Histology images and immunohistochemistry were not available, and tissue from the earlier procedures was not examined.

The main lesson from this case is that a presumed Bartholin's gland cyst should be reconsidered when the lesion is recurrent, painful in a cyclical pattern or unresponsive to standard management as in our case. Secondly , ultrasound features of an endometrioma can be mistaken for a complex Bartholin's cyst.

Conclusion

Vulvar endometriosis should be considered in any woman with a recurrent or cystic vulvar swelling that is painful, changes with the menstrual cycle, or discharges old, chocolate-colored blood, particularly when it has recurred after incision and drainage for a presumed Bartholin's gland cyst. In this patient, two drainage procedures without tissue diagnosis delayed recognition of the condition.Surgical excision gave symptom relief in this patient at short-term follow-up. Tissue obtained from any recurrent vulva cyst should be sent for histology, and longer follow-up is needed to assess outcomes.

Acknowledgments: All health professionals involved in the management of this case.

Funding Statement: No funding was received.

Consent for Publication: Institutional ethical approval was waivered for the publication of this case report. Written informed consents for the publication of this case report and accompanying images were obtained from the patient.

Author Contributions:

Handsome Dube contributed to the conception of the report, clinical management, data collection, literature review, manuscript drafting , proof reading and submission for publication.

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Aimable Segwiza contributed to data collection , literature review , analysis, revision and proof reading. All authors gave final approval of the version to be published

Disclosure: The authors declare that there are no competing interests

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