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Case Report

Anterolateral vaginal cyst in an adult woman: a rare case of Mullerian cyst

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ABSTRACT

Mullerian cysts are of embryological origin and are usually found incidentally during delivery or a routine gynaecological examination. They remain asymptomatic unless they become large enough to cause heaviness or pressure on the surrounding structures, here we are presenting case of 29-year-old multi para (P2L2 both NVD) with 4×3 cm mass arising from the anterior vaginal wall. Complete vaginal cyst excision done. The cyst was filled with grey brown solid homogenous material and histopathology of ciliated columnar epithelium with squamous epithelium later on confirmed the diagnosis.

Keywords: Mullerian cyst, Anterolateral vaginal cyst

INTRODUCTION

The prevalence of vaginal cysts is very low, estimated at less than 1%, and they typically present during the third or fourth decade of life.[1] These cysts are usually small and asymptomatic, measuring between 0.1 and 2 cm in diameter. However, larger cysts exceeding 4 cm may cause symptoms such as a feeling of heaviness in the perineal region, vulvar swelling, discomfort, dyspareunia, voiding difficulties, or vaginal discharge, thereby drawing clinical attention. Vaginal cysts may be either congenital or acquired. Based on histopathological findings, congenital cysts can originate from Müllerian, paramesonephric, or urothelial tissues.[2] The differential diagnosis of a cyst in the lower female genital tract includes Müllerian cyst, inclusion cyst, mesonephric (Gartner's duct) cyst, Bartholin gland cyst, urethrocele, urethral diverticulum, Skene's duct cyst, pelvic organ prolapse, hematocolpos, and myxomatous tumor.[3] Among these, Müllerian cysts are the most common, accounting for approximately one-third of all benign vaginal cysts.[4] They are typically lined by endocervical or, less commonly, fallopian tube-type epithelium and most frequently develop in women in their third or fourth decade of life.[5] Here, we report a unique case of a vaginal cyst presenting with voiding difficulty and increased menstrual flow in a woman who first noticed the cyst two years earlier, during her reproductive age. Initially, she was referred to our medical college with a provisional diagnosis of cystocele. However, on clinical examination, the lesion was identified as a vaginal cyst located in the anterolateral vaginal wall. Histopathological examination confirmed the diagnosis of a Müllerian cyst.

CASE REPORT

A 26-year-old woman, P2L2, was referred to the Department of Obstetrics and Gynecology, People's College of Medical Sciences and Research Centre, with a diagnosis of cystocele. She reported a history of a vaginal mass descending through the introitus for the past 2 years,

associated with itching and urinary complaints. She had previously consulted a private hospital, where she was diagnosed with cystocele. She also complained of dyspareunia and difficulty in walking due to the prolapse. Additionally, she had a history of heavy menstrual bleeding for the last 2 years. The mass size increase gradually and had been evident for about 2 years. Her medical history was unremarkable. On per speculum examination a mass seen on the anterior aspect of vagina. On per vaginal examination, non-tender mass felt with the size of 4×3 cm with both extent of cyst easily palpated without any difficulty (Figures 1 and 2).

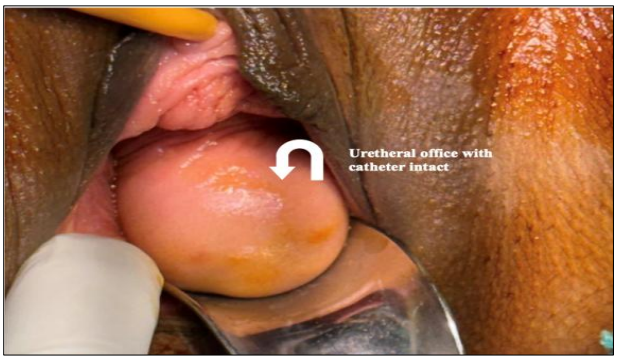

Figure 1: Vaginal cyst.

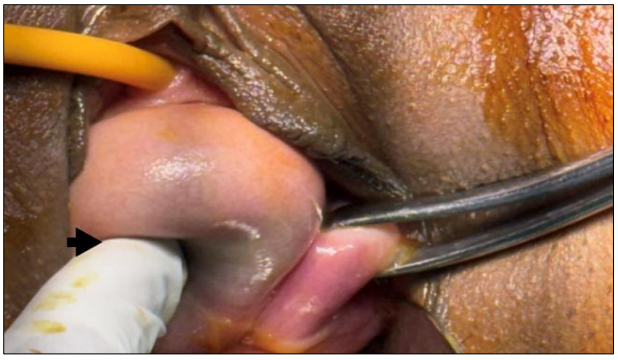

Figure 2: Anterior lip of cervix holded with vulsulm and cyst pointed with finger.

Perineal ultrasonography shows a well-defined cystic lesion of size 4.1×3.1×4.3 cm (vol=30 cc) is noted projecting outward from the vaginal opening. It showed absent internal vascularity on colour doppler with no relationship existed between the cyst and low urinary tract suggesting lesion was independent. Any associated genitourinary tract abnormality was excluded by ultrasonography (USG). After all pre-op investigation and anaesthesia fitness, patient underwent complete vaginal cyst excision in view of provisional diagnosis of Gartner duct cyst. Under spinal anesthesia, the patient was positioned in dorsal lithotomy. Using a metal catheter inside the urethra, the plane of dissection between the urethra and cyst wall was identified. We also performed methylene blue dye test to see any connection between the cyst and urethera and test was negative. A curvilinear incision over the anterior vaginal wall was made by the vaginal route, and the cyst separated from the vaginal wall in toto without rupture (Figures 3 and 4). Complete excision of cyst was performed and the surgery was uneventfully (Figures 5 and 6).

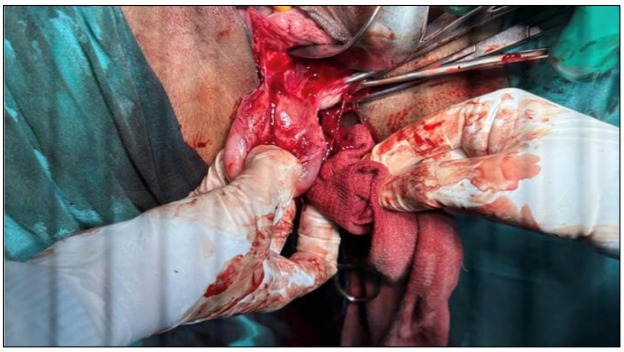

Figure 3: Post vaginal wall separation.

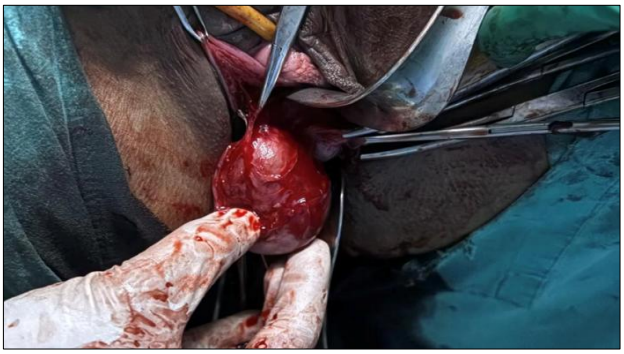

Figure 4: Cyst wall freed from the vagina.

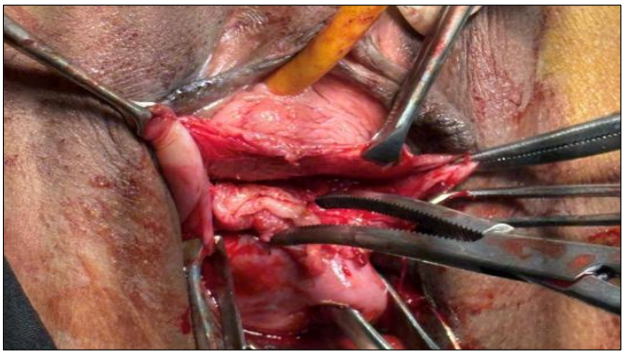

Figure 5: Cyst completely removed from the wall and all the haemostasis achieved.

Figures 7 and 8 shows complete removal and closure of the wall with all homeostasis achieved. The post-operative period was uneventful and patient was discharged on day 3 of post-operative day.

Histopathology show cyst with outer surface lined by non-keratinised stratified squamous epithelium and inner surface lined by ciliated columnar epithelium with squamous metaplasia, cyst is filled with grey brown soils homogenous material features suggestive of Mullerian cyst (Figure 9).

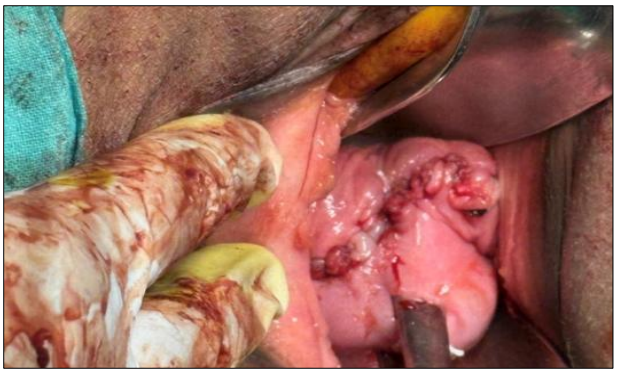

Figure 6: Wall completely stitched.

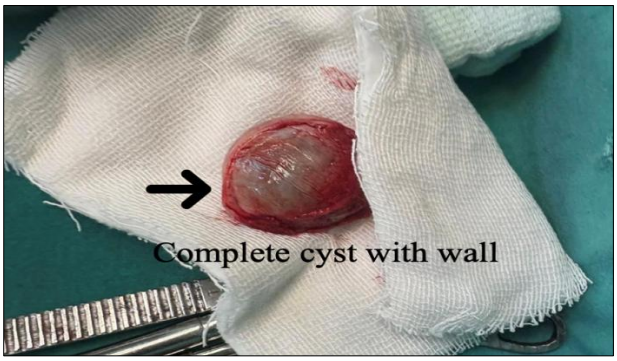

Figure 7: Complete cyst.

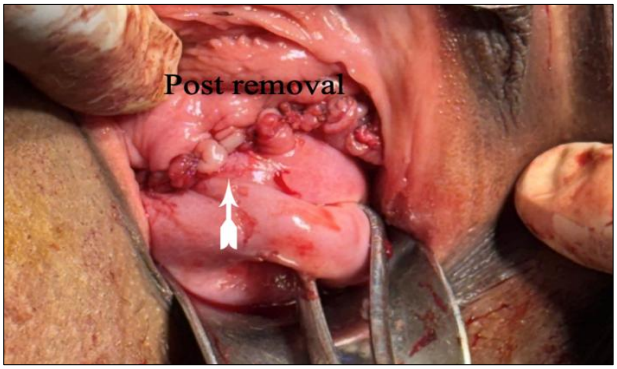

Figure 8: Post removal.

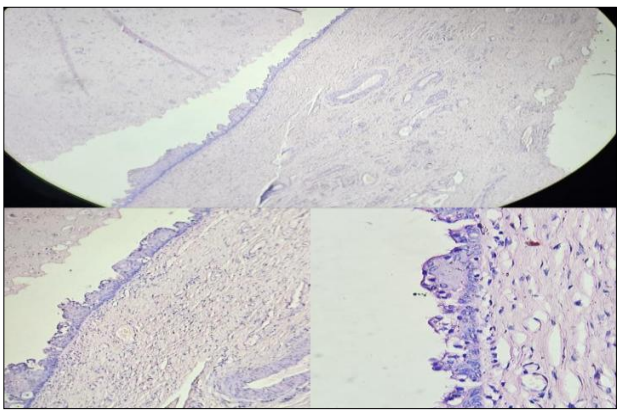

Figure 9: Histopathological assessment.

Histopathology section studied show a cyst with outer surface lined by non-keratinised stratified squamous epithelium and inner surface lined by ciliated columnar epithelium with squamous metaplasia. Sub epithelial tissue shows mild chronic inflammation and many congested blood vessels. Cyst is filled with amorphous material having foamy macrophages and few inflammatory cells.

The patient was followed up twice in OPD, her menstrual cycle was normal after post cyst excision (Figure 10).

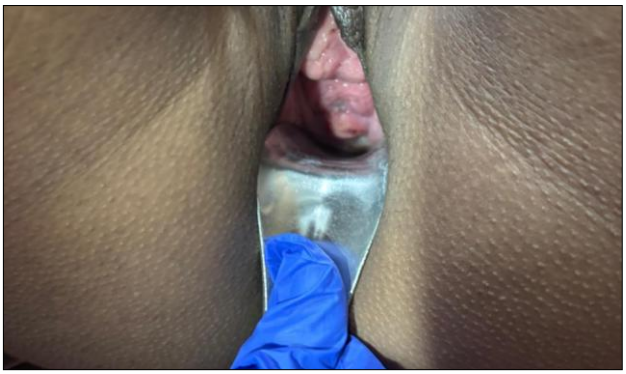

Figure 10: After post cyst excision.

DISCUSSION

Vaginal cysts are uncommon lesions, most often of embryological origin. During embryonic development, both the mesonephric (Wolffian) and paramesonephric (Müllerian) ducts are present in the female fetus. In the absence of testosterone, the mesonephric duct undergoes regression, while the paired Müllerian ducts fuse to form the uterus, cervix, upper vagina, and a portion of the vestibule and female urethra. During vaginal formation, the Müllerian ducts join the urogenital sinus, from which the sinovaginal bulbs evaginate and proliferate cranially to form the lower third of the vagina. Subsequently, the squamous epithelium derived from the urogenital sinus replaces the mucinous columnar epithelium of the Müllerian duct. Any residual Müllerian epithelial foci in the lower vagina may persist and give rise to cysts over time through mucinous secretion. The presence of columnar epithelial lining with mucinous content in the cyst wall is a key diagnostic feature of cysts of Müllerian origin.[6] Among vaginal cysts, Müllerian cysts are the most frequently encountered, accounting for approximately 40% of cases. They are almost always benign, with malignant transformation reported only rarely in literature.[7] Other important types include Gartner's duct cysts (≈12%): arise from mesonephric duct remnants, typically located along the lateral vaginal wall, Bartholin cysts: located in the posterolateral lower third of the vagina, originating from obstruction of Bartholin's glands, epidermal inclusion cysts: usually associated with previous episiotomy scars or local trauma, urethral diverticula: congenital or acquired, sometimes presenting with the classic triad of postvoid dribbling, dysuria, and

dyspareunia, and endometriotic cysts: appear as bluish nodules, often in the posterior fornix, and are commonly associated with dysmenorrhea.[8-11]

Before diagnosing a vaginal cyst, other more common conditions such as pelvic organ prolapse and cystocele should be excluded. Cystocele typically presents with a positive cough impulse, diffuse margins, and reducibility, whereas vaginal cysts are well-defined, non-reducible, and often associated with loss of vaginal rugosities.[9] Imaging plays a central role in evaluation. Ultrasonography is the first-line modality, being cost-effective and suitable for assessing cyst size, site, and relation to adjacent structures. However, MRI remains the investigation of choice due to its superior contrast resolution and multiplanar capabilities.[12] Histopathological examinations is essential for definitive diagnosis, with mucin staining helping differentiate Müllerian cysts from Gartner's cysts.[13] Management is individualized according to cyst size and symptomatology. Small, asymptomatic cysts (<4 cm) can be managed conservatively with periodic follow-up, whereas larger or symptomatic cysts warrant intervention. Complete surgical excision is the preferred treatment as it minimizes recurrence, although alternative techniques such as aspiration, marsupialization, or unroofing have been described. Evidence regarding the natural progression of small cysts and recurrence rates following different procedures remains limited.

CONCLUSION

Vaginal cysts, though uncommon, should be considered in the differential diagnosis of anterior or lateral vaginal wall cyst. Careful history taking, clinical examination, and imaging are crucial to differentiate them from conditions such as cystocele, pelvic organ prolapse, and urethral diverticula. Our case highlights an unusual Müllerian cyst presenting with dyspareunia symptoms, yet confined to the vaginal wall without intraperitoneal extension. Complete surgical excision remains the treatment of choice, and histopathology continues to be the gold standard for definitive diagnosis. Proper evaluation and appropriate management help ensure favorable outcomes and reduce the risk of recurrence.

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REFERENCES

1. Marisa RN, Oliva E. Gynecologic Pathology. Philadelphia (PA): Elsevier Health Sciences. 2009.
2. Deppisch LM. Cysts of the vagina: classification and clinical correlations. Obstet Gynecol. 1975;45:632-7.
3. Eilber KS, Raz S. Benign cystic lesions of the vagina: a literature review. J Urol. 2003;170(3):717-22.
4. Deppisch LM. Cysts of the vagina: classification and clinical correlations. Obstet Gynecol. 1975;45:632-7.
5. Rivlin ME, Meeks GR, Ghafar MA, Lewin JR. Intracystic hemorrhage in a non-endometriotic mullerian vaginal cyst. World J Clin Cases. 2013;1:34-6.
6. Töz E, Sancı M, Cumurcu S, Özcan A. Müllerian cyst of the vagina masquerading as a cystocele. Case Rep Obstet Gynecol. 2015;2015:376834.
7. Lee KS, Park KH, Lee S, Kim JY, Seo SS. Adenocarcinoma arising in a vaginal müllerian cyst: a case report. Gynecol Oncol. 2005;99:767-9.
8. Thapa BD, Regmi MC. Gartner's duct cyst of the vagina: a case report. JNMA J Nepal Med Assoc. 2020;58:505-7.
9. Töz E, Sancı M, Cumurcu S, Özcan A. Müllerian cyst of the vagina masquerading as a cystocele. Case Rep Obstet Gynecol. 2015;2015:376834.
10. N J Neurology. Urethral diverticulum in women: symptoms, causes and treatment. 2019. Available at: https://njurology.com/urethral-diverticulum-in-women-symptoms-causes-and-treatment/. Accessed on 20 August 2025.
11. Rivlin ME, Meeks GR, Ghafar MA, Lewin JR. Intracystic hemorrhage in a non-endometriotic mullerian vaginal cyst. World J Clin Cases. 2013;1:34-6.
12. Inocêncio G, Azevedo S, Braga A, Carinhas MJ. Large Gartner cyst. BMJ Case Rep. 2013;2013:0.
13. Kondi-Pafiti A, Grapsa D, Papakonstantinou K, Kairi-Vassilatou E, Xasiakos D. Vaginal cysts: a common pathologic entity revisited. Clin Exp Obstet Gynecol. 2008;35(1):41-4.

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