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Case Report

Gartner duct cyst masquerading as vaginal prolapse

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ABSTRACT

The urogenital system in fetuses contains two types of ducts: Wolffian and Müllerian. The Wolffian ducts form fallopian tubes, uterus, cervix, and upper vagina in females. Sometimes, these ducts regress, forming the Gartner duct cyst. These cysts are asymptomatic and often associated with congenital ureteral and renal abnormalities. They can cause urinary flow obstruction and retention. Understanding these benign cystic vaginal lesions is crucial for examination and therapy. A 48-year-old patient with a history of prolapse was referred to our outpatient department for a vaginal cyst. Her symptoms began slowly and gradually escalated over the past two months. Upon examination, a large, tense cystic growth measuring 8×8 cm was noted. Ultrasonography showed a fibroid uterus. A vaginal cyst excision was performed, and the cyst was filled with chylous fluid. Cytology showed few lymphocytes and neutrophils, benign squamous epithelial cells, with no evidence of malignancy. Histopathological examination showed stratified squamous epithelium and cystic space without any lining epithelium. The patient was discharged on postoperative day 4 and followed up in the outpatient department after six months.

Keywords: Gartner duct cyst, Anterior vaginal wall, Vaginal cyst

INTRODUCTION

In both male and female fetuses, the urogenital system contains two types of ducts, the Wolffian and the Müllerian, which are essential for the reproductive and urinary systems. The fallopian tubes, uterus, cervix, and upper vagina form in females when the Müllerian ducts combine during the eighth week of embryonic development. In addition, the Wolffian ducts usually regress during the development of the female fetal organ. Occasionally they remain and the caudal portion forms the vaginal inclusion cyst known as Gartner duct cyst. They are mostly asymptomatic and are found incidentally during the pelvic examination. Other common vaginal cysts include epidermal inclusion cysts, Bartholin duct cysts, and Mullerian cysts.¹ Usually, Gartner duct cysts are associated with multiple congenital ureteral and renal abnormalities, including congenital ipsilateral renal dysgenesis or agenesis, crossed fused renal ectopia, and ectopic ureters.

Gartner's duct cysts are typically not associated with urine retention. However, a large or abnormal remnant can put pressure on neighboring structures like the urethra or bladder neck, leading to urinary flow obstruction and retention. Understanding the varied diagnosis of benign cystic vaginal lesions and accompanying anomalies will assist in examination and therapy.

We report a Gartner duct cyst which was approximately 8 cm and presented as a procidentia.

CASE REPORT

Fully informed consent was obtained from the patient to report data and to use any photographic material. The 48-year-old patient was referred from a private hospital labelled as prolapse to our outpatient department with her complaint being something coming out of the vagina with an increased frequency of micturition associated with burning which increased over the past 2 months. Her

symptoms started slowly and gradually escalated. She has four vaginal deliveries, there was no history of difficult, prolonged, or instrumental delivery. She has undergone tubal ligation 21 years back. She also complained of heavy menstrual bleeding for 2 months. The patient didn't have any significant history.

Her vitals were stable. Her abdomen was soft. On per speculum examination, a huge, tense, cystic growth measuring 8×8 cm was noted which was irreducible. There was no cough reflex, and no vaginal rugosities were seen. The cervix was not visualized. On per vaginal examination, 8×8 cm size vaginal wall cyst appreciated coming from the right vaginal wall. The cervix felt separately. The uterus was retroverted and bulky in size nearly 8-10 weeks, non-tender, and freely mobile.



Figure 1: Vaginal cyst covered with vaginal mucosa.

Table 1: Pre-operative investigations of the patient.

Investigations	Observed value
Blood group	A Rh positive
Haemoglobin	10.2
Total leukocyte count	5300
Platelet count	264000
FBS PPBS	145 226
Liver function tests	Within normal limits
Renal function tests	Within normal limits
TSH	Within normal limits

Ultrasonography showed uterus with 7.1×4.3×3.5 cm size. A well-defined heterogenous lesion noted of 4.8×4.6 cm involving fundus displacing ET to posterior noted suggestive of submucosal fibroid. MRI was suggestive of bulky retroverted uterus with soft tissue lesion of size 45×42 mm in anterior wall, displacing endometrium posteriorly implying fibroid uterus. Another well-defined single cystic lesion of 98×65×41 mm is seen in the region of vagina and coming outside mostly a vaginal cyst.

After taking proper fitness, the patient was posted for vaginal cyst excision. Cyst excision was done under regional anaesthesia. Under adequate exposure of the cyst

using retractors, surrounding vaginal epithelium is infiltrated using normal saline. Anterior wall of the cyst was adherent to bladder wall and posterior wall of cyst extended upto lower end of the bladder. Blunt and sharp dissection done and cyst wall retracted and cyst removed. Due to dense adhesions between the cyst wall and the bladder, small bladder injury was suspected during dissection. Retrograde filling of bladder was done and bladder found to be intact.



Figure 2: Cyst fluid.



Figure 3: Post operative image of the the excised vaginal cyst wall.

The cyst was filled with chylous fluid which was sent for cytology. It showed few lymphocytes, and neutrophilic benign squamous epithelial cells against a granular background with no evidence of malignancy. Histopathological examination showed stratified squamous epithelium. The deeper areas show cystic space without any lining epithelium. There was no evidence of

atypia, malignancy, or any other specific pathology. It gave a provisional diagnosis of Gartner's duct cyst.

The patient was discharged on postoperative day 4. She followed up in the OPD after 6 months and was free of symptoms.

DISCUSSION

Vaginal cysts are rare, benign, mostly cystic lesions of the anterior vaginal wall, with a prevalence of 1 in 200 women.² Vaginal cysts are often asymptomatic, with dimensions less than 2 cm, and present as an incidental finding on a gynecological examination. Therefore, they are usually not reported, and their real incidence may be underestimated.² Vaginal cysts are more commonly present in the third and fourth decades of life.² Surgical excision of the vaginal cyst via vaginal approach is the common management approach, with low recurrence rates.³ Pathologic confirmation is recommended to exclude malignancy as there have been reported cases of malignant transformation.⁴ True Gartner duct cysts typically are situated on the front and side walls of the proximal third of the female genitalia. Cysts of the Gartner duct can also have associations with malformations in the metanephric renal system. While these anomalies typically appear in childhood, recognizing this connection should encourage prompt action. Clinicians should visualize the urinary tract in these patients. Aside from direct communications, ectopic ureters are also seen draining into Gartner duct cysts leading to urinary incontinence.⁵ magnetic resonance imaging is the investigation of choice for Gartner duct cyst. They exhibit low signal intensity on T1-weighted images and high signal intensity on T2-weighted images when they are simple cysts. Most of these lesions are confined to the vaginal walls, but the larger cysts can extend into the ischiorectal fossa. Imaging modalities like transvaginal sonography and MRI are helpful in exact localization, number, and communication with surrounding structures.⁶ Confirmation is by histopathological examination revealing cellular remnants composed of non-mucin-secreting low columnar or cuboidal epithelium. Simple transvaginal excision or marsupialization is typically sufficient if surgical intervention is necessary. However, surgical excision is linked to bleeding due to the inherent vascularity of the vulva and vagina. Additionally, harm to the urethra, bladder, and ureters, as well as subsequent development of genitourinary fistula, may be linked to this.

Sexual frigidity may arise from damage to the area's sensory nerves, removal of a significant portion of skin, or both in cases of clitoral and hymenal Gartner cysts. Hemorrhage, dyspareunia, and pain are additional postoperative complications. Such complications can be reduced with the aid of laser surgery. Abd-Rabbo and Atta

presented a brand-new, side-effect-free approach to the treatment of these cysts that included aspiration combined with 5% tetracycline sclerotherapy.⁷

A minimally invasive procedure that leaves little surgical scars is cyst marsupialization. Following such a procedure, long-term monitoring confirms its effectiveness, with no evidence of side effects or recurrence.⁸

CONCLUSION

As Gartner's cysts are rare, conservative therapy is a safe option for asymptomatic patients. Surgery is, however, strongly recommended in cases involving large cysts or significant symptoms, and patients should be thoroughly watched following the procedure. One benefit of this strategy is that it lessens recurrence rates. An important and successful treatment for enormous Gardner's cyst-induced acute urine retention is surgery. A comprehensive assessment of the patient's condition should inform the surgical procedure chosen, with the goal being the relief of obstruction and the return of normal urine function.

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