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Case Report

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Giant gartner's cyst on the lateral vaginal wall: case report and literature review

Abstract

Introduction: Gartner's cyst is an embryonic remnant of the wolff mesonephric ducts, presenting with an unknown prevalence estimated in 1-2% of women. The reported size is generally for cysts smaller than 1 centimeters in diameter, however there are reports of larger and symptomatic cysts.

Materials and method: Descriptive, report of a case and brief bibliographic review.

A 39-year-old woman with a history of hypothyroidism and three previous myomectomies presented with a symptomatic left vaginal mass causing a sensation of a vaginal bulge, urinary difficulty, mild pelvic pain, and dyspareunia. Physical examination revealed a firm, non-tender, non-reducible 5-cm paravaginal mass. Transvaginal ultrasound demonstrated a 34 × 19 × 37 mm avascular cystic lesion arising from the left vaginal wall, consistent with a Gartner's duct cyst. Complete surgical excision was performed through a vaginal approach following identification of a submucosal dissection plane, allowing preservation of adjacent structures. The vaginal mucosa was closed with interrupted 3-0 Vicryl® sutures, with an estimated blood loss of 200 mL and an operative time of approximately 1 hour. Histopathological examination confirmed the diagnosis of Gartner's duct cyst. The postoperative course was uneventful.

Discussion: Gartner's cyst is a remnant of embryonic tissue from mesonephric ducts, affects approximately 1-2% of the population. Its diagnosis is mainly in reproductive age, which may affect the quality of life as well as being associated with malformations of the urinary tract. Gartner's cyst is a benign mass, however there are few reports in the literature, being in 2009 reported by Anne Sophie Bats a malignant cyst presenting adenocacinoma reported by the pathology service inside, associated with hypervascularity. The surgical approach is usually reserved for patients with symptoms, however, there is no standardized surgical approach technique. Drainage of the cyst is reported by puncture, marsupialization, partial excision, cyst aspiration, and even intracystic injection with fluorescein.

Conclusions: The reported cyst In this case, She was clinically diagnosed by symptoms associated with alterations in urination, as well as a sensation of a foreign body at the vaginal level and dyspareunia. An ultrasound scan was performed without alteration of urinary tract. The approach was adhered to the treatment described in the literature with adequate aesthetic functional results, no trans-surgical or post-surgical complications were reported.

Keywords: gartner's duct cyst, vaginal cyst, lateral vaginal wall, mesonephric duct remnant, vaginal mass, surgical excision, transvaginal ultrasonography

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Introduction

Gartner's duct cyst is an embryologic remnant of the Wolffian (mesonephric) ducts, which drain into the lateral walls of the urogenital sinus and subsequently give rise to the vagina, uterus, urethra, and bladder. In females, the Wolffian ducts undergo obliteration in the absence of testosterone around the 10th week of gestation.[1] As a result, they may persist as cystic embryonic remnants ranging from the leaves of the broad ligament (paraovarian cysts) to the lateral walls of the uterus and vaginal mucosa.[2]

The prevalence of Gartner's duct cyst is not precisely known. It is estimated that 1–2% of women may present this lesion, representing approximately 12.5% of vaginal cysts.[3] However, most measure less than 2 cm in diameter and are therefore asymptomatic and clinically undetected. Larger cysts are rare. Histologically, they are lined by simple columnar or cuboidal non–mucin-secreting epithelium.[4] Although uncommon in pediatric populations, isolated cases have been reported in association with other Müllerian anomalies. Gartner's duct cysts are most frequently diagnosed during reproductive age, often triggered by symptoms noted during sexual intercourse or routine gynecologic evaluation.[5]

The most common symptoms include dyspareunia, vaginal bulging (frequently misdiagnosed as cystocele), urinary incontinence, obstruction of vaginal outflow, difficulty inserting tampons, and vaginal pressure.[6] Diagnosis is based on clinical history and physical examination. Imaging studies such as transvaginal ultrasound, magnetic resonance imaging, and computed tomography are recommended when there is clinical suspicion of associated urogenital malformations. Imaging is primarily useful to determine the size and depth of the cyst, whereas the diagnosis remains essentially clinical.[7]

The preferred treatment is surgical excision, indicated in symptomatic patients. Several techniques have been described, including cyst aspiration, marsupialization, partial excision, and intracystic injection of fluorescein to delineate boundaries; however, no standardized surgical approach exists for the management of this benign condition.[8] Malignant transformation of Gartner's duct cyst is exceedingly rare. Bats AS et al.,[8] reported a single case of clear cell

adenocarcinoma arising within a Gartner's duct cyst measuring 32 × 21 × 42 mm with ultrasonographic evidence of increased vascularity. This remains the only case reported in the medical literature to date.[9]

Case presentation

A 39-year-old woman with a history of hypothyroidism treated with levothyroxine 50 mcg daily and prior surgical history notable for a cesarean section in 2018 for a term twin pregnancy and three separate uterine myomectomies, the first of which was complicated by intraoperative hemorrhage requiring blood transfusion. No additional relevant medical history was reported. The patient presented with a vaginal mass prolapse and sensation of a foreign body in the vagina beginning after pregnancy, associated with urinary difficulty, mild pelvic pain, and dyspareunia (Figure 1).

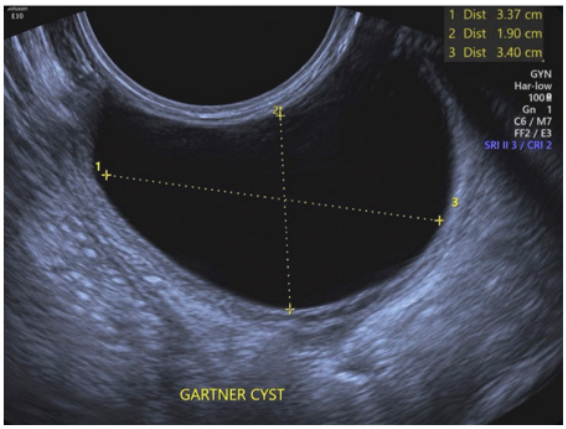

Figure 1 Ultrasonographic image of Gartner's duct cyst located in the left vaginal lateral wall, measuring 32 × 21 × 42 mm, larger than average values reported in the literature.

Physical examination and diagnostic studies

Physical examination revealed a palpable protruding mass measuring approximately 5 cm in diameter (Figure 2), with smooth, well-defined borders, adhered to the left vaginal wall, non-reducible, non-tender, firm, and isochromic with the surrounding vaginal mucosa. A transvaginal ultrasound with Doppler performed on 04/20/2019 demonstrated a left paravaginal cystic lesion measuring 34 × 19 × 37 mm with an estimated volume of 12.5 mL, anechoic content, and no internal vascular flow on color Doppler.

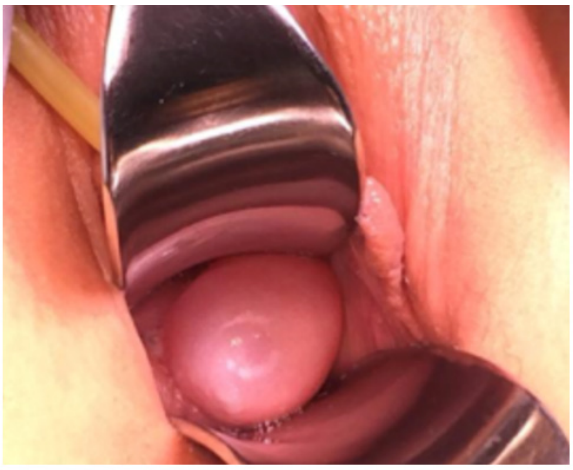

Figure 2 Clinical visualization of the cyst prior to surgical removal, demonstrating physical dimensions greater than those noted on ultrasound (5 cm).

Diagnosis

Clinical impression of Gartner's duct cyst, with histopathologic confirmation.

Treatment

The patient underwent surgical management. Patient was placed in the lithotomy position, and urinary catheter in place, the vaginal wall was adequately exposed with Hickman valves, then beginning with infiltration of vaginal mucosa using lidocaine with epinephrine (lidocaine 2% w/ epinephrine 20mg/0.005mg/1ml) a mucosal incision was made over the inferior portion of the cyst capsule, followed by dissection and cyst drainage using scissors, A submucosal cleavage plane was identified, and careful dissection was carried out to separate the cyst wall from the surrounding vaginal tissues. Complete excision of the lesion was achieved while preserving the integrity of adjacent structures. Hemostasis was confirmed with selective use of monopolar electrocautery (Figure 3).

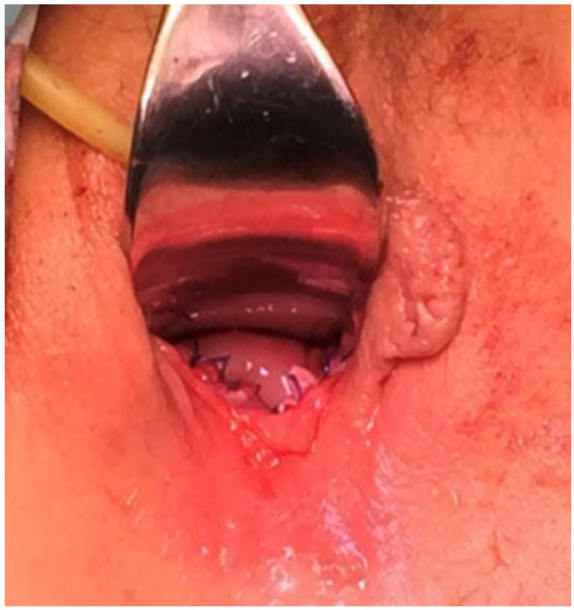

Figure 3 Postoperative result following cyst excision, demonstrating absence of the previously identified mass.

The vaginal mucosa was then reapproximated using interrupted simple 3-0 Vicryl® sutures. The procedure was completed without complications, and the specimen was submitted for histopathological evaluation, estimated blood loss was 200 ml and operative time approximately 1 hour.

Given the secondary diagnosis of bilateral inguinal hernia, hernioplasty was performed during the same operative session. The excised cyst capsule was submitted for histopathological analysis.

Ethical considerations

This case report respects patient confidentiality; identifying information was withheld, and informed consent was obtained for the academic use of clinical and surgical information.

Discussion

Gartner duct cysts are uncommon benign lesions that arise from remnants of the mesonephric (Wolffian) ducts. They are typically located along the anterolateral vaginal wall and are often discovered

incidentally during routine gynecological examinations, as most remain small and asymptomatic throughout life.

When symptoms occur, they are usually related to the size and location of the lesion. Patients may present with dyspareunia, pelvic discomfort, urinary symptoms, or the sensation of a vaginal mass. Because of these nonspecific manifestations, large Gartner duct cysts can easily be mistaken for other conditions affecting the vaginal wall, including urethral diverticula, Müllerian cysts, Bartholin gland cysts, inclusion cysts, or even pelvic organ prolapse.

In the present case, the patient sought medical attention because of progressive symptoms that negatively affected her quality of life. Clinical examination revealed a large cystic lesion arising from the lateral vaginal wall. The location of the mass and its characteristic appearance strongly suggested the diagnosis of a Gartner duct cyst, which was later confirmed by histopathological evaluation.

Imaging studies are useful in the evaluation of these lesions, particularly when the diagnosis is uncertain or when the cyst reaches considerable dimensions. Ultrasonography is often sufficient to demonstrate a well-defined cystic structure and can assist in surgical planning. In selected cases, magnetic resonance imaging may provide additional information regarding the relationship between the lesion and surrounding pelvic structures.

Although small asymptomatic cysts can often be managed conservatively, surgical treatment is generally recommended for symptomatic lesions. Complete excision offers several advantages, including definitive diagnosis, symptom relief, and a low likelihood of recurrence. In our patient, complete vaginal excision was performed without complications, resulting in an excellent anatomical and functional outcome.

A review of previously published cases suggests that giant Gartner duct cysts remain relatively rare. Most reported lesions measure only a few centimeters and are discovered incidentally. The considerable size of the lesion described in our patient, together with the associated urinary and sexual symptoms, makes this case particularly noteworthy. Furthermore, successful management through a vaginal approach demonstrates that complete excision can be performed safely even in large lesions when adequate surgical planning is undertaken.

Although malignant transformation is exceptionally rare, histopathological examination remains essential to confirm the diagnosis and exclude other pathologies. For this reason, complete surgical excision continues to be considered the preferred treatment in symptomatic patients.

This case highlights the importance of including Gartner duct cysts in the differential diagnosis of lateral vaginal wall masses. Early recognition and appropriate surgical management can provide excellent outcomes while preventing prolonged symptoms and unnecessary diagnostic procedures.

Conclusion

Gartner's duct cyst is an uncommon lesion primarily diagnosed clinically, usually in gynecological consultation or pediatric examination, big size cyst are more uncommon and normally asymptomatic, when symptomatic we should explore the possibility of surgery for improving life quality in this patients, although imaging particularly ultrasonography assists in characterization and surgical planning. Pelvic floor changes associated with the patient's age group may contribute to increased cyst size, and anatomical variations or malformations may be concurrently present. Further studies are needed to standardize diagnostic criteria and establish a preferred surgical approach.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

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