CASE REPORT

Gartner's Duct Cyst in Recurrent Vaginal Infection: A Case Report

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Received on: 02 August 2024; *Accepted on:* 28 August 2024; *Published on:* 23 October 2024

Abstract

Gartner's duct cysts are benign lesions that arise from the remnant of the Wolffian duct that in females supposed to regress and form a vaginal inclusion cyst. Gartner's duct cyst mostly came without any symptoms. It was found during a pelvic examination which is commonly on the anterolateral side of the proximate vaginal wall and is usually small with a diameter of less than 2 cm. We present a 29-year-old multiparous woman with a chief complaint of a vaginal mass protruding causing vaginal discomfort and recurrent vaginal discharge. The examination found a vaginal cyst sized 3 × 3 cm on the anterolateral aspect of the vagina with a milky white discharge found in the vaginal canal. Transvaginal ultrasound found a hypoechoic appearance at the vaginal wall suggesting a vaginal cyst. The patient then underwent surgical excision with a histopathology result consistent with the Gartner duct cyst characteristics.

Keywords: Case report, Gartner's duct cyst, Pelvic mass, Recurrent vaginal infection, Vaginal cyst, Wolffian duct.

Journal of South Asian Federation of Obstetrics and Gynaecology (2024): 10.5005/jp-journals-10006-2524

Introduction

Benign lesions called Gartner's duct cysts develop from the remains of the Wolffian duct, which is thought to regress in females and produce a vaginal inclusion cyst. Most of the time, Gartner's duct cyst is asymptomatic, discovered during a normal pelvic exam, however, in a rare case of ectopic ureter where the ureter has connections with the vaginal cavity, which might communicate with the Gartner's duct cyst and causing urinary incontinence.[1] This is because abnormalities in metanephric development can also cause symptoms of urinary incontinence in people with ectopic ureters. Other symptoms that are frequently encountered include pelvic pain, a bulging mass, dyspareunia, and incontinence when urinating.

Müllerian malformations are categorized by the European Society for Human Reproduction and Embryology/European Society for Gynecological Endoscopy (ESHRE/ESGE) according to their anatomical state; uterine, cervical, and vaginal anomalies are classed separately.[2] Complex distal mesonephric anomalies, such as ipsilateral blind hemivagina syndrome, unilateral renal agenesis, and related non-Müllerian malformations, may include a Gartner's duct cyst.[3] Gartner's duct cysts are typically tiny, usually measured less than 2 cm in diameter, and are most frequently observed along the proximal vagina's anterolateral walls.[4] The patient's complaints increase with the size of the cyst.

Case Description

A 29-year-old multiparous woman came to our clinic with a chief complaint of a vaginal mass protruding causing vaginal discomfort and recurrent vaginal discharge. The vaginal mass was enlarged 2 years ago, previously she did not have any complaints, but in the last 1 year ago, the mass had significantly enlarged causing discomfort especially when she had intercourse with her husband, causing vaginal pain afterward. She also complains of recurrent itchy and whitish vaginal discharge in the last 1 year. She had a history of cesarean section in 2013 due to induction failure, and successful vaginal birth after cesarean section (VBAC) in 2022. There is no history of pelvic surgery before (Fig. 1).

On gynecology, the examination found a vaginal cyst sized 3 × 3 cm on the anterolateral aspect of the vagina. Milky white discharge was found in the vaginal canal, sample was taken for microbiology examination with the result of *Candida albicans* infection. The cervix was normal. The pelvic examination then ruled out Bartholin's duct cyst and cystocele. We did a transvaginal ultrasound and found a normal-sized uterus with a hypoechoic appearance at the vaginal wall sized 2.55 × 1.41 cm suggesting a vaginal cyst (Fig. 2).

Laboratory examination consisted of a complete blood count and urinalysis was normal. The diagnosis was then made. Furthermore, an advanced imaging study of magnetic resonance imaging (MRI) was considered but was not done due to cost and effectiveness considerations.

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How to cite this article: Alexandra L, Lengkong RA, Panelewen DLI, *et al*. Gartner's Duct Cyst in Recurrent Vaginal Infection: A Case Report. J South Asian Feder Obst Gynae 2024;16(5):581–582.

Source of support: Nil

Conflict of interest: None

Patient consent statement: The author(s) have obtained written informed consent from the patient for publication of the case report details and related images.

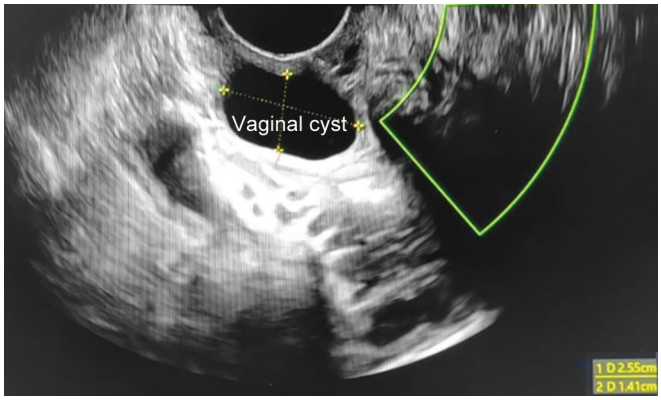

Fig. 1: Transvaginal ultrasound showing vaginal cyst

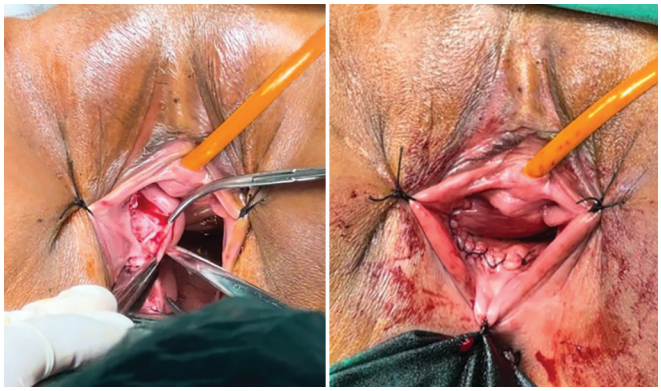

Fig. 2: Intraoperative excision and after the procedure was done

The patient then underwent surgical excision and vaginal repair. The surgical specimen was sent for histopathology, the result was mucinous secreting low columnar epithelium, consistent with the Gartner duct cyst characteristics. The patient was followed up after 1 week and a 1-month post-surgery and she has no complaint following the surgery.

Discussion

The beginning of the Gartner's duct occurs during the fetal stage. The union of Müllerian ducts produces the upper vagina, cervix, and uterus during embryonic development. These structures are encircled by a layer of glandular pseudostratified columnar epithelium. Female Wolffian ducts usually recede, leaving behind the paroöphoron, epoöphoron, and Gartner's duct.[1,4] The majority of Gartner's duct cysts are minor in size and usually present with no symptoms when detected during normal gynecologic checkups. A surgical excision may be necessary to address symptoms like urine retention, pressure, itching, dyspareunia, pelvic pain, and mass protrusion from the vaginal cavity caused by an enlarged cyst.

In our case, the patient came to our clinic due to a protrusion of vaginal mass causing discomfort and recurrent vaginal discharge. Due to this mass, the patient experienced recurrent milky vaginal discharge which is a candida infection. We hypothesize that the mass causes an acid-base imbalance in the vagina causing opportunistic infections such as *C. albicans*. Further study needs to be done to conclude this hypothesis.

Several benign vaginal cysts, such as Müllerian cysts, endometrioid cysts, epidermal inclusion cysts, Bartholin cysts or abscesses, and unknown forms, exist in addition to Gartner's duct cyst. The anterolateral walls of the proximal vagina are where true Gartner's duct cysts are most observed, whereas the posterolateral borders of the distal vagina typically include a Bartholin cyst.[1] A 3 × 3 cm cyst at the vagina's lateral aspect in our situation suggests a Gartner's duct cyst.

To confirm the diagnosis of Gartner's duct cyst, imaging tests such as ultrasound and more sophisticated ones like magnetic resonance imaging (MRI) can be performed. Even though MRIs are more diagnostic, they are not advised because ultrasounds are more cost-effective and sufficient for care[3,4] as well as endorsed by the ESHRE/ESGE 2015 Thessaloniki consensus on the diagnosis of female genital abnormalities, which promotes the use of ultrasonography and gynecological examination as the principal diagnostic instruments and is generally accepted as appropriate for the majority of scenarios.[2] Considering this agreement, we carried out an ultrasound examination and discovered a hypoechoic appearance on the vaginal wall, which may indicate the presence of a vaginal cyst.

The primary method of treating a Gartner's duct cyst is surgery excision; other methods, such as marsupialization or expectant management techniques such as cyst draining with a simple catheter, can be used in several circumstances.[3–5] The diagnosis of Gartner's duct cyst was further supported by histopathology, which revealed a cyst bordered with low columnar or nonmucinous cuboidal epithelium. Following surgical removal, a histopathology investigation revealed mucinous secreting low columnar epithelium in our case, consistent with the features of a Gartner duct cyst.

Conclusion

This case report showed that different sites of the vaginal might predispose to certain types of vaginal cysts, so a thorough examination should be done carefully. The presence of vaginal cysts might influence the environment of the vagina, further causing infection.

Clinical Significance

Gartner's duct cyst might be causing recurrent vaginal infections.

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