International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Purandare T et al. Int J Reprod Contracept Obstet Gynecol. 2024 Mar;13(3):744-746
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20240490

Case Report

Rare co-occurrence of a Mullerian cyst and a Gartner's duct cyst

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Received: 17 January 2024
Accepted: 01 February 2024

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ABSTRACT

Vaginal cysts of embryological origin are a relatively rare entity. They are often small, solitary and asymptomatic, found incidentally on pelvic examination or imaging. Mullerian cysts are formed by remnants of paramesonephric (Mullerian) ducts, while Gartner's duct cysts are formed by remnants of mesonephric ducts (Wolffian) ducts. These are usually managed expectantly unless they become large and symptomatic. In this case, surgical excision is done. We report the case of a 36-year-old female who presented to the outpatient department of gynaecology with symptoms of mass per vaginum, vaginal discharge and pelvic pain. She did not have any bladder or bowel complaints. Upon pelvic examination, she was found to have a second degree uterovaginal prolapse with a decubitus ulcer and a reducible cystocele. The ulcer had a small opening giving continuous discharge. We suspected this to be a ruptured cyst along the right antero lateral vaginal wall. The patient was admitted for a cyst excision and vaginal hysterectomy. Only intraoperatively, another cyst along the posterior vaginal wall, close to the vault, was discovered. Histopathological examination confirmed the anterolateral one was a Mullerian cyst, unusually accompanied by a Gartner's duct cyst on the posterior vaginal wall.

Keywords: Mullerian cyst, Gartner's duct cyst, Pelvic organ prolapse and vaginal cysts, mesonephric duct, Woffian duct

INTRODUCTION

A cyst is an abnormal, closed, fluid filled cavity lined by epithelium. Vaginal cysts are uncommon as the mucosal coat of the vagina is devoid of glands. The prevalence of vaginal cysts is 1 in 200 women, in their third or fourth decade of life.[1,2] Types include Mullerian cyst, epidermal inclusion cyst, Bartholin's cyst, Gartner's duct cyst and endometrioid cyst. Of all cysts, Mullerian is the most common type.[3] Vaginal cysts are small, solitary and largely benign entities that mostly go undiagnosed. If large or symptomatic, they are treated by transvaginal surgical excision. At times, they mimic pelvic organ prolapse.[1]

Those of embryological origin such as Mullerian and Gartner's duct cysts are formed from cystic dilatation of remnants of their respective ducts, that have failed to regress completely. We report a case where cysts from two different embryological remnants were uniquely present in the same patient. They were large enough to cause symptoms and warrant surgical intervention. The Mullerian cyst had ruptured partially and the Gartner's duct cyst had an atypical location, along posterior vaginal wall.

CASE REPORT

A 36-year-old female (para 4, living 4, tubectomised) came with complaints of something coming out of her vagina and copious vaginal discharge. She became symptomatic 20 years ago, post her first vaginal delivery. With every child birth, her symptoms worsened. In the month prior to her visit, they became most bothersome and prompted her to come to the hospital. The mass protruding from her vagina had progressively increased in size over time, as had

the volume of vaginal discharge. Additionally, pelvic pain had set in. No bowel or bladder complaints were noted. All four of her vaginal deliveries were full term, normal and in hospital, with no history of instrumentation. She had regular menses, without passage of clots or dysmenorrhea. No history of major illness, surgery or significant family history was given.

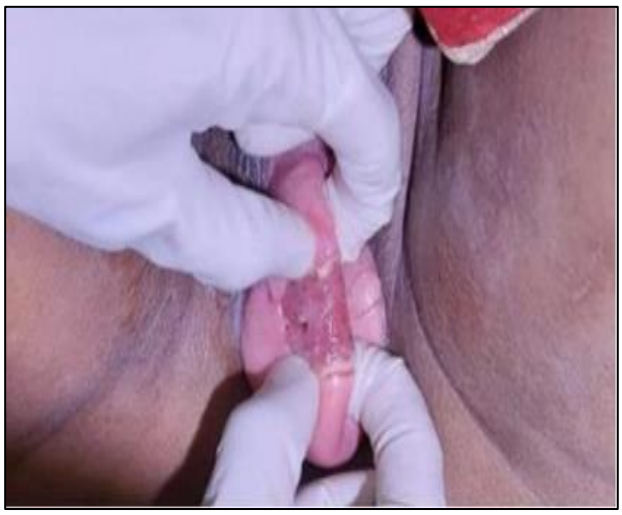

Figure 1: Decubitus ulcer with opening of vaginal cyst.

On examination, her vitals were normal. A small scar from a laparoscopic tubal ligation was visible on her abdomen, which was soft and non tender on palpation. Pelvic examination revealed second degree utero vaginal prolapse and a high cystocele. A decubitus ulcer, measuring 3 cm x 4 cm, with a small opening was seen below the urethra, giving continuous mucoid discharge. We suspected there to be a cyst along the right anterolateral vaginal wall that had ruptured partially. A three swab test was performed to rule out a urogenital fistula. This was followed by ultrasound imaging which confirmed our clinical findings and helped rule out any associated renal anomalies.

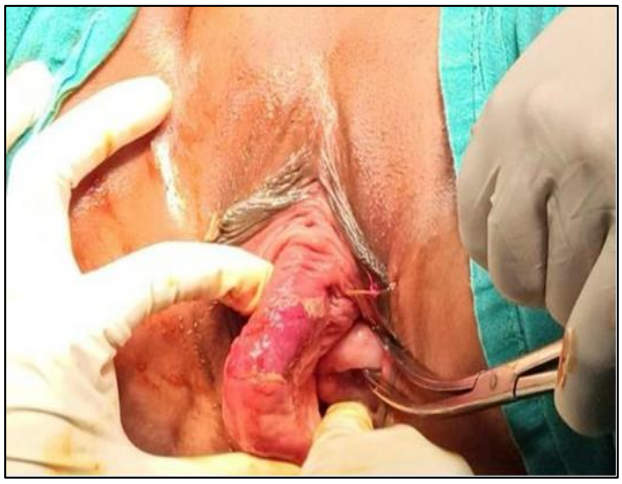

Figure 2: Intra operative image of exposed vaginal cyst, antero superior to prolapsed cervix.

The patient was admitted for a cyst excision with a vaginal hysterectomy and cystocele repair. Vaginal packing was done with glycerin and betadine and routine day 1 labs were sent. All were within normal limits but for her hemogram which revealed an Hb of 7.9 gm/dl. Therefore, she was given 200 mg of injectable iron along with B12 and folate supplements. After 9 days of admission, when her hemoglobin rose to 11 mg/dl and ulcer showed improvement, she was taken in for surgery.

The surgery was done under spinal anesthesia. Lithotomy position was given to the patient followed by reduction of the protruding, ulcerated right vaginal wall with cyst. Bladder was drained and cervix visualised. Submucosal infiltration with normal saline was done. A circumferential incision was made over the vagina, bladder was pushed up and vaginal cyst wall of dimensions 8×9 cm along the right anterolateral aspect was dissected. This was followed by opening of pouches and a total vaginal hysterectomy. Another cyst was noted, along the posterior vaginal wall, near the vault, of about 3×3 cm. This was excised as well. Cystocele repair was done, followed by vault closure. The intraoperative and postoperative period was uneventful.

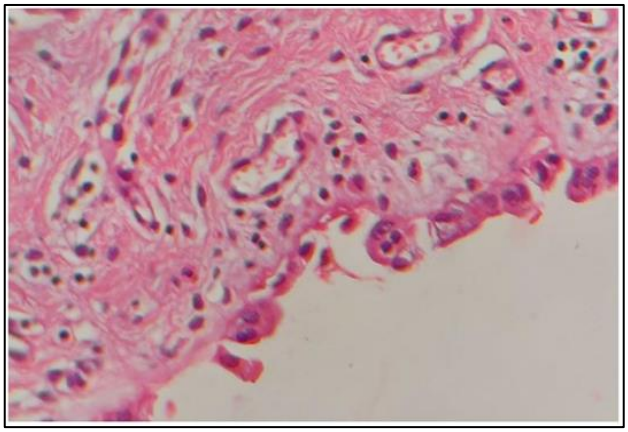

Figure 3: Mullerian cyst lined by mucin secreting, tall columnar epithelium.

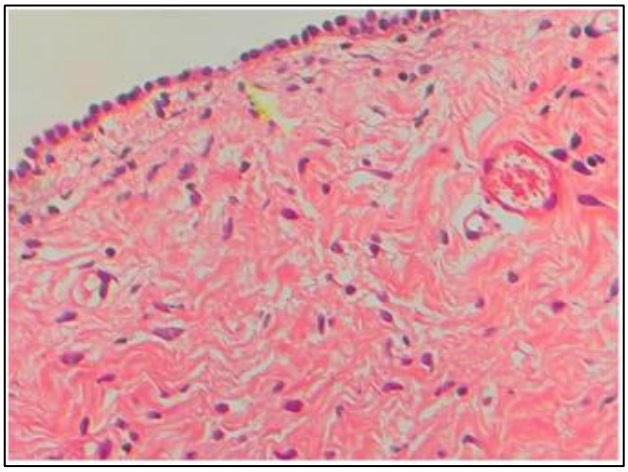

Figure 4: Gartner's duct cyst lined by cuboidal or low columnar epithelium.

According to the histopathology report, the cyst excised from the right antero lateral vaginal wall, was lined by stratified squamous epithelium and partly by tall columnar epithelium, suggestive of a Mullerian cyst. While that excised from the posterior vaginal wall, was lined by a single layer of cuboidal to low columnar epithelium, indicative of a Gartner's duct cyst. Patient was asked to follow up at 2 weeks and 3 months. Her vault was healthy and she had complete relief from symptoms.

DISCUSSION

Up to 9 weeks of development, both Mullerian and Wolffian ducts are present in the female embryo. However, due to the absence of testosterone, Woffian ducts slowly regress and Mullerian ducts fuse to form the uterus, cervix, fallopian tubes and proximal 1/3 of the vagina. As the vagina develops, Mullerian epithelium is replaced by squamous epithelium of the urogenital sinus. Occasionally, some of this epithelium persists in the vagina and forms a cyst over time.[4] On the other hand, in males, Mullerian ducts regress with the release of the anti-Mullerian hormone and under the influence of testosterone, Woffian ducts form internal genitalia. Additionally, Wolffian ducts also contribute to the development of the metanephric urinary system in both sexes. Incomplete regression of the Wolffian ducts occurs in 25% of the female population. Of this, only 1% transform into Gartner's duct cysts.[5] These may be accompanied by urinary malformations such as ectopic ureter, unilateral renal agenesis and renal hypoplasia.[6] On histology, it is seen that Mullerian cysts are lined by mucin-secreting columnar epithelium. Often this epithelium resembles that of tissues derived from Mullerian ducts, such as the endocervix.[7] As against this, Gartner's duct cysts are lined by cuboidal/low columnar epithelium which is non mucin secreting.[8]

Both cysts have a similar presentation in that they are small (<2 cm), asymptomatic and located on the anterior or lateral vaginal wall. Only when large enough, do they produce symptoms such as dyspareunia, dysuria, pelvic pain and vaginal discharge. In which case, they require surgical intervention. Cyst excision is most commonly performed, to avoid chances of recurrence. They rarely undergo malignant transformation.[9,10] Pelvic examination and ultrasonography are sufficient to make a diagnosis. An MRI may be useful in delineating lesions missed on routine examination and preventing intra operative surprises. Histopathological examination is confirmatory.

CONCLUSION

Careful history taking, clinical and histopathological examination are necessary to differentiate these cysts from other vaginal pathologies. Bartholin's cysts are located along the inner side of the labia majora (posterolateral aspect of the lower third of the vagina) and are often accompanied by signs of inflammation. They are lined by transitional, squamous or mucin rich columnar epithelium. Epidermal inclusion cysts are formed at the site of trauma or surgery and are lined by stratified squamous epithelium. Endometriotic cysts present as small, bluish or brownish nodules. A urethral diverticulum may present with an additional symptom of post void dribbling and can be ruled out with investigations such as voiding cystourethrogram, cystoscopy. A cystocele will present with a characteristic positive cough impulse, reducible nature, ill-defined margins and the vaginal mucosa over it will have intact transverse rugosities.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Purandare T, Junnare K. Rare co-occurrence of a Mullerian cyst and a Gartner's duct cyst. Int J Reprod Contracept Obstet Gynecol 2024;13:744-6.