British Journal of Healthcare and Medical Research - Vol. 11, No. 06
Publication Date: December 25, 2024
DOI:10.14738/bjhr.1106.18011.
Cachon-Alpuche, J. C., Sarmiento-Haydar, O. J., Miranda-Guillermo, M. A., & Martinez, D. A. (2024). Gartner Cyst Associated with Renal Agenesis and Mullerian Malformation: A Case Report. British Journal of Healthcare and Medical Research, Vol - 11(06). 318-325.

Gartner Cyst Associated with Renal Agenesis and Mullerian Malformation: A Case Report

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INTRODUCCION

The Gartner duct, in human females, is an embryologic remnant of distal mesonephric (Wolffian) ducts. Gartner duct cysts (GDC) are usually solitary, unilateral, and are located in the anterolateral wall of the proximal third of the vagina. In most cases, GDCs do not exceed 2 cm in diameter, are asymptomatic, and have been reported to occur in as many as 1%-2% of all women. Larger cysts are rarely described. [1]

During embryogenesis, because of hormonal influence, the Mullerian duct system develops to form the female genital tract (including the fallopian tubes, uterus and upper vagina), while the Wolffian duct system regresses, and may eventually disappear. Occasionally a part of this Wolffian system remains.[2]

The cysts may present as a mass protruding from the vagina, accompanied with skin tag, dysuria, pressure, itching, dyspareunia, pelvic pain, abdominal pain, urinary incontinence, urinary tract infection, and vaginal discharge.[1]

The surgical management of a GDC is controversial. Vaginal excision has mostly been performed for enormous GDCs. However, up to 11.4% recurrence was reported after vaginal excision, possibly owing to incomplete excision.[3]

Congenital malformations of the urinary tract are associated frequently with genital tract abnormalities, because interaction between the ductal systems is necessary for normal growth. The finding of an anomaly in 1 system should alert the clinician to the possibility of an abnormality in the other.[4]

The 35% of female patients with unilateral renal agenesis have partial or complete duplication of the genital tract. Renal agenesis is present in 43% of patients with uterus didelphys and that 10% of patients with genital tract abnormalities had an abnormal or ectopic kidney. The incidence of unilateral renal agenesis is approximately 1 in 1000 autopsies.[4]

Developmental abnormalities of the Müllerian duct system encompass a wide spectrum of anomalies resulting from nondevelopment, defective fusion, or incomplete septal regression during fetal life. The prevalence of Müllerian duct anomalies (MDAs) is unclear, because many are asymptomatic and may go unnoticed. Reported prevalence in unselected populations ranged from 0.4% to 1%.[5]

Congenital malformations of the female genital tract are defined as deviations from normal anatomy resulting from embryological maldevelopment of the Müllerian or paramesonephric ducts. They represent a rather common benign condition with a prevalence of 4–7% in some literature. Moreover, depending on the type and the degree of anatomical distortion, they are associated with health and reproductive problems. [6]

There are many proposed classification systems for Müllerian anomalies, the American Fertility Society (AFS) Classification from 1988, the ESHRE/ESGE Classification from 2013 and the ASMR from 2021 this last one has been the most recognized and utilized in the last years.[7]

The aim of this case report was to present findings of Gartner duct cysts associated with Müllerian and renal agenesia. We describe here a case of a Gartner cyst of approximately 10 cm, associated with renal agenesis, vaginal surgical approach and laparoscopic findings of Müllerian anomaly.

CASE REPORT

This is a 21-year-old female patient who comes to the outpatient clinic due to the presence of dyspareunia and the sensation of a foreign body in the vagina.

He denies a history of chronic degenerative diseases, surgical history, allergies to medications, and other significant history.

The patient began to suffer 1 year ago, characterized by the presence of dyspareunia, associated with the sensation of a mass in the vaginal region, for which reason she came to the doctor. A physical examination was performed, revealing the presence of a fluctuating mass of approximately 5 cm in the right vaginal wall, in the upper two thirds, which was not adequately delimited because it extends to the right cervical region.

A complementary ultrasound was requested, finding a cystic image in the vaginal dome on the right side, corroborated by ultrasound, with a simple, uncomplicated appearance and dimensions of 4.1*2.1*2.2 cm.

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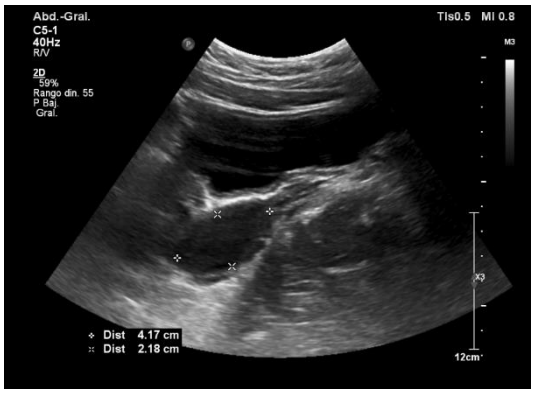

Image 1: Ultrasound with image of a cyst in the right paracervical region.

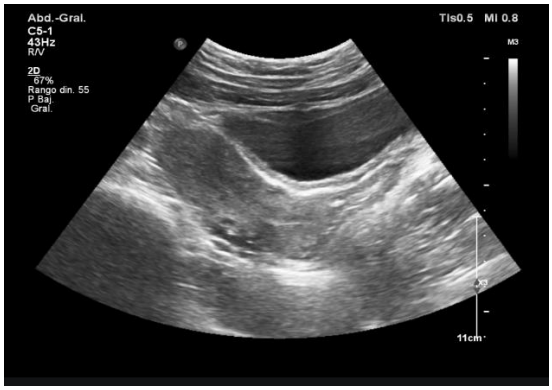

Image 2: Ultrasound with image of the uterus with suspected Müllerian malformation.

Due to the above and as part of the diagnostic protocol, a renal ultrasound (USG) was performed to rule out other associated malformations, finding a single left bikaryotic kidney with a double collecting system as an anatomical variant. The right kidney was not located, which is why a computerized axial tomography was performed, reporting the absence of the right kidney (congenital), a left kidney with normal morphology, enlarged in size 14 * 6.8 cm with a double collecting system.

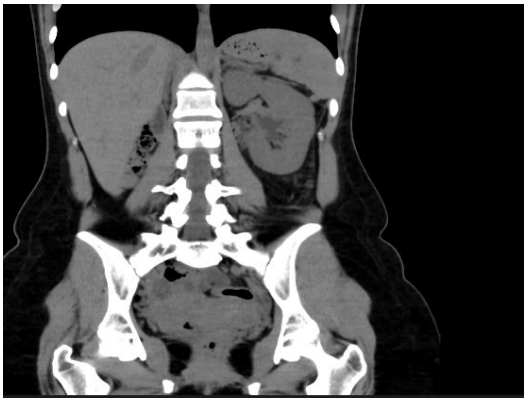

Image 3: Tomography with right renal agenesis.

Diagnostic laparoscopy was also performed due to suspicion of associated Müllerian malformation during ultrasound, which was performed confirming malformation with the

presence of a left unicornuate uterus, with a right uterine vestige not communicating with the cervical region. Presence of both ovaries and tubes.

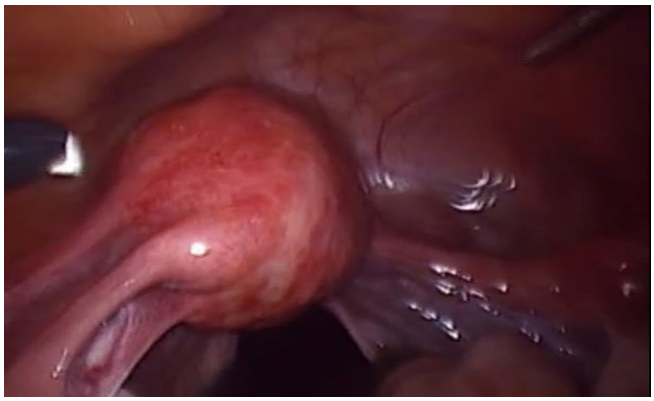

Image 4: Laparoscopy with evidence of unicornuate uterus.

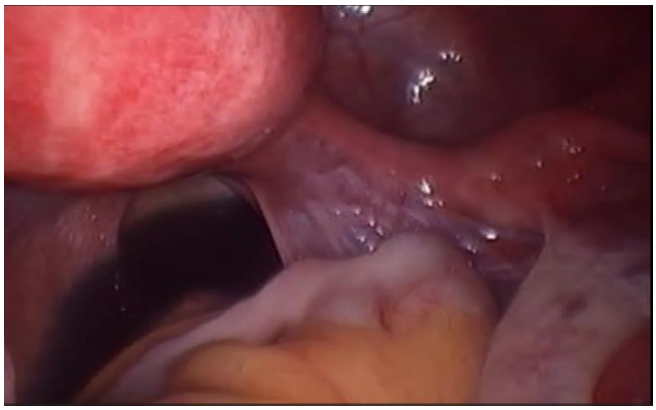

Image 5: Image of non-communicating right vestige, with tube and ovary without alterations.

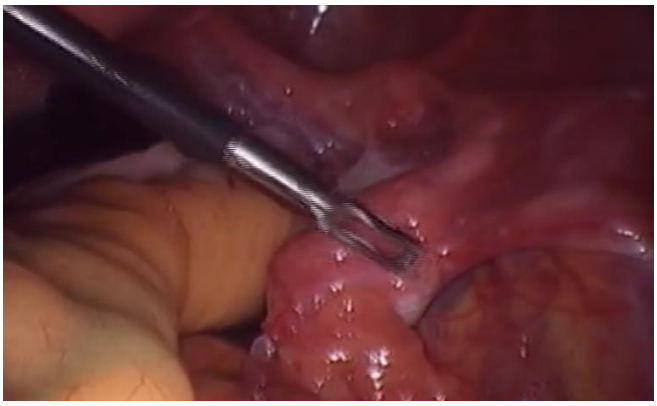

Image 6: Right tube and ovary without alterations.

It was decided to perform excision of the Gartner cyst, which was performed vaginally with spontaneous rupture of the cyst during the surgical procedure, draining approximately 50 cc of dark material from which no sample could be obtained. The cyst was then removed in its entirety. The patient then goes into recovery and is discharged 24 hours later without complications.

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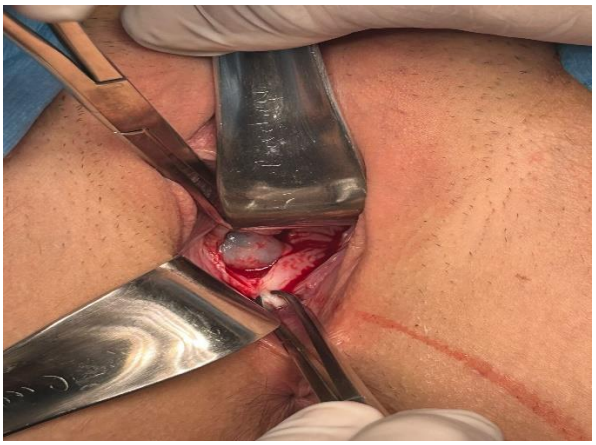

Image 7: Vaginal resection of Gartner cyst.

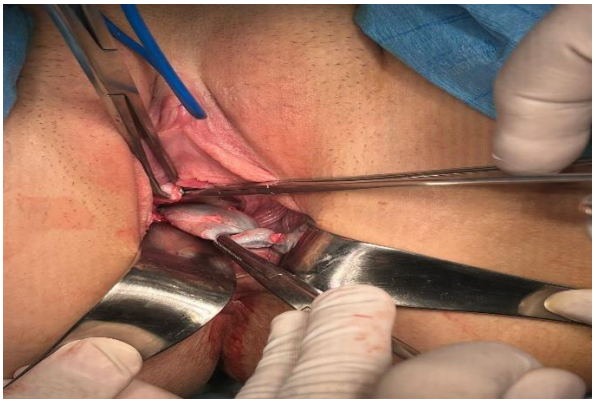

Image 8: Dissection by planes of a giant cyst of approximately 10 cm in its largest diameter.

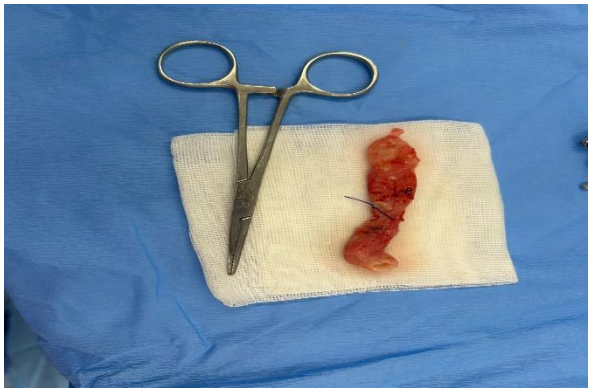

Image 9: Comparison of piece with 10 cm gauze after breakage during extraction.

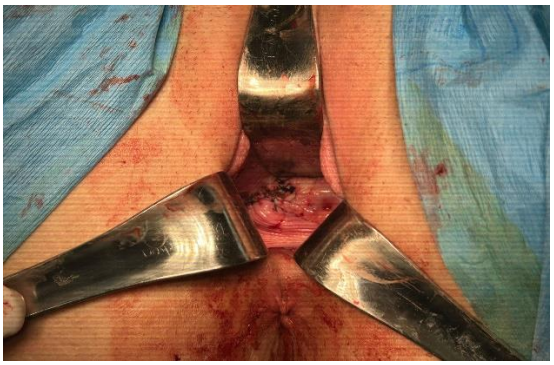

Image 10. Final result of the right vaginal and paracervical wall.

It is sent to the pathology service, which reports as follows: A surgical piece measuring 6.5 cm in length is received, labeled as a Gartner's cyst. It is elongated, grayish-white in color, and has a rubbery consistency. When cut, it is cystic with a central cavity with walls with an average thickness of 2 mm and the internal surface is smooth of the color described. Representative sections are included in two capsules. DIAGNOSIS: VAGINAL CYST (RESECTION): GARTNER'S DUCT (MESONEPHRIC) CYST COMPLETELY REMOVED.

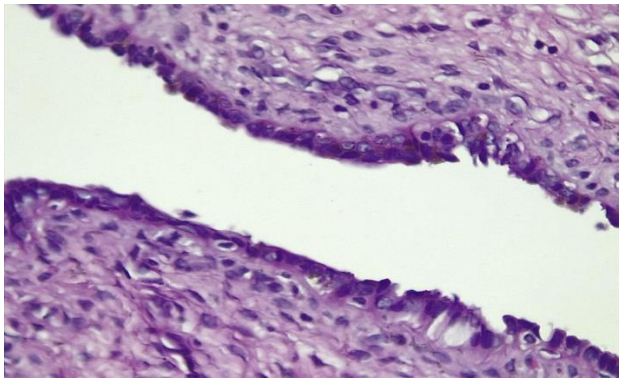

Image 11: Histopathology image of Gartner cyst.

Image 12: Final piece of Gartner cyst pathology.

DISCUSIÓN

The patient provides an example of a rare constellation of diagnoses: a Gartner’s duct cyst, unicornuate uterus and unilateral renal agenesis.

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The GDC is a cystic dilatation of mesonephric duct remnants located on the vagina or cervix. The cyst can be posterior to the bladder, protrude into it mimicking an ureterocele, or protrude into the introitus presenting as an introital mass.[8] GDCs can be asymptomatic, cause infections or, as in the present case, cause dyspareunia.

A variety of investigations have been proposed to assess GDCs including ultrasound, intravenous pyelography, CT, MRI or injection of contrast into the cysts by direct puncture.[8]

Cystic lesions of the vagina are a common occurrence in women in their third and fourth decades, and represent a spectrum of disease from embryological derivatives to preneoplastic lesions. Familiarity with the different diagnoses is essential for any clinician involved in gynecological or female urological practice to arrive at the correct diagnosis and treatment plan.[9]

The difficulties in treating vaginal cystic lesions lie primarily in diagnosis and indication. The main vaginal cystic formations can correspond to four different entities: mucinous cysts, Gartner duct cysts (Wolffian cysts), endometriotic cysts and urethral diverticula.[10]

The surgical management of a GDC is controversial. Vaginal excision versus laparoscopic excision is in debate, because of the 11.4% of recurrence possibly due to incomplete excision.[3] Compared with vaginal excision laparoscopic excision provides direct vision of the anatomical details of internal structures in the pelvis.

Regarding Müllerian malformations, despite the existence of different guides, there is no consensus on which is the best way to classify the malformations.

It is important to consider the diagnosis of congenital anomalies in women with GDC, especially the association of renal and Müllerian malformations. There are no reported cases describing the association between Gartner's duct cyst, unicornuate uterus and unilateral renal agenesis, further investigation is needed.

There are no current guidelines for the diagnosis of Gartner duct cysts or their association with Müllerian and renal malformations.

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