VAGINAL GARTNER CYSTS: CLINICAL REPORT OF FOUR CASES AND A BIBLIOGRAPHIC REVIEW

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Summary.- OBJECTIVES: To present a series of four cases of Gartner cysts and their clinical presentation. A bibliographic review was performed.

METHODS: The series consisted of 4 women, mean age 39, who complained of a bulge at the anterior vaginal wall, associated with a variety of urinary symptoms.

RESULTS: Surgical removal was performed in all cases. The pathological studies confirmed the diagnosis of Gartner cyst. There were no recurrences in the long-term follow-up.

CONCLUSION: Vaginal wall cysts are rarely found in common urological practice. Gartner cysts arise as a consequence of the Gartner duct (mesonephric remainder) obstruction and they are located in the anterior or lateral wall of the vagina. They may be associated with renal and ureteral anomalies. Differential diagnosis with other vaginal cysts can only be made by histological studies. The correct treatment is the entire removal through a vaginal approach.

Keywords: Gartner cyst. Muller duct. Vaginal cyst.

Resumen.- OBJETIVO: Presentar una serie de 4 casos de quiste de Gartner, mostrando su forma de presentación y realizando una revisión de la literatura.

MÉTODO: La serie está constituida por 4 mujeres, con una edad media de 39 años, cuyo motivo de consulta fue la presencia de un aumento de volumen de pared vaginal anterior y diversa sintomatología urinaria.

RESULTADOS: Se realizó la extracción quirúrgica en todos los casos, sin complicaciones. En los cuatro casos se confirmó el diagnóstico anátomo-patológico de quiste de Gartner. No hubo recidivas en el largo plazo.

CONCLUSIÓN: Los quistes de la pared vaginal constituyen una entidad poco frecuente dentro de la práctica urológica habitual. Los quistes de Gartner se originan como consecuencia de la obstrucción del conducto de Gartner, remanente mesonéfrico, y se localizan en la pared anterior o lateral de la vagina. Puede asociarse a anomalías renales y ureterales. El diagnóstico diferencial con otros quistes vaginales solo puede realizarse mediante el estudio histológico, siendo el tratamiento de elección la extirpación por vía vaginal.

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INTRODUCTION

Urethral and paraurethral cysts are part of vaginal cysts. While a prevalence of around 1% has been estimated, it is overly assumed that this figure is higher, given that symptoms are rarely presented (1). These disorders are most commonly found in medium-age women. The diagnosis is based upon history and physical examination, requiring definitive histologic confirmation (1-3).

Gartner cysts account for 11% of all vaginal cysts and they are the result of total or partial obstruction of the Gartner duct (mesonephric remainder). They are generally located in the anterior or lateral wall of the vagina from the cervix to introitus, although there have exceptionally been described in a posterior location (3).

MATERIAL AND METHODS

We report a series of 4 women, ranging from 32 to 42 years old, who complained of a vaginal bulge associated with voiding symptoms, such as urinary retention, decreased of urinary stream, incomplete voiding, or urgency. Two of the patients presented a recurrence after surgery performed in other centers. The physical examination showed a mass of 2 to 4 cm at the antero-lateral wall of the vagina (Figure 1). The clinical findings are shown in Table I.

RESULTS

In all four cases, the treatment consisted of a complete removal of the tumor by a vaginal approach, therefore avoiding urethral damage.

In lithotomy position a 16 Fr bladder catheter and a Wilson retractor were placed. Anterior vaginal wall was incised as inverted “U” and urethral lesion was extirpated with electronic scalpel at 35 W, so avoiding rupture and recurrence risk. The urethra was easily identified at all time. Cleavage plane was found between the lesion and the urethra. Vaginal wall was closed with continuous suture of Monocryl 4.0®.

The bladder catheter was left in place during 12 hours. All patients were discharged the day after surgery. No recurrence, dyspareunia or voiding alterations have been reported, with an average follow-up of 18 months.

Pathological analysis confirmed the final diagnosis of Gartner cyst (Figure 2).

DISCUSSION

The vagina arises from the paramesonephric duct (Müller), mesonephric duct (Wolf) and urogenital sinus. At the 6th week of development, the Müllerian duct develops in the fallopian tubes, uterus and upper third of the vagina. The Wolf duct advances from behind the perineum to the sidewalls of the vagina, where involutes as the Gartner duct. At the bottom of

Figure 1. There is a bulky mass in antero-lateral vaginal wall, with urethral deviation.

Figure 2. Aspect of Gartner cyst in a cut section.
**Table I. Clinicopathological features of the series.**

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Age</th>
<th>Localization at the vagina</th>
<th>Urological history</th>
<th>Previous treatment</th>
<th>Sintomatology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>42</td>
<td>Anterior wall</td>
<td>UAR (x3) UTI</td>
<td>Uretral dilatation</td>
<td>Voiding syndrome UAR</td>
</tr>
<tr>
<td>Case 2</td>
<td>32</td>
<td>Left wall</td>
<td>No</td>
<td>Ciprofloxacín 1g/24h 15 days</td>
<td>Purulent vaginal discharge</td>
</tr>
<tr>
<td>Case 3</td>
<td>41</td>
<td>Right wall</td>
<td>No</td>
<td>Cyst excision</td>
<td>Urinary incontinence</td>
</tr>
<tr>
<td>Case 4</td>
<td>34</td>
<td>Left wall</td>
<td>Vaginal birth 3 months before</td>
<td>Surgical drainage</td>
<td>Voiding syndrome</td>
</tr>
</tbody>
</table>

UAR: Urinary acute retention  
Voiding syndrome: urinary retention, decreased of urinary stream, incomplete voiding and urgency

Inclusion cysts  
- Stratified squamous epithelium, usually around previous episiotomy area.  
- They can contain purulent material.

Gartner cysts  
- Lined by cuboidal low columnar, nonciliated, nonmucinous cells, usually around the antero lateral wall of the vagina surrounding the way of the mesonephric duct.

Mullerian cysts  
- Lined by columnar, mucinous cells, anywhere in the vagina.

Bartholin’s gland cyst  
- Lined by Transitional or columnar, mucinous cells, near the Bartholin’s gland aperture into the introitus.

**Table II. Pathologic characteristics of vaginal cysts.**

The vagina the urogenital sinus originates the Skene and Bartholin glands (4).

Gartner cysts occur as a result of total or partial obstruction of the duct of Gartner. These cysts can be associated with ipsilateral renal anomalies; in fact unilateral renal agenesis was found in 6% of patients (4). In addition, up to 50% of patients with Gartner cyst and renal dysplasia could also present ipsilateral obstruction of the Mullerian duct (5).

The cysts are usually solitary, small and asymptomatic masses, however cysts can grow further, so being able to cause symptoms of lower urinary tract, dyspareunia, vaginal discharge due to rupture of the cyst presenting amber or chocolaty color when associated to intracystic hemorrhage. This growth is most evident during pregnancy due to increased vulvar blood flow. In addition, multiple cysts are recognized to occur in rare cases of having several embryonic remnants (6).

The diagnosis of vaginal cysts is done through clinical and physical examination. Magnetic resonance is the preferred imaging technique for characterization and delineation of the cyst and to assess the possibility of associated anomalies of the upper urinary tract.

History and physical examination alone make it complex to performance differential diagnosis with other vaginal cysts (müllerian, Skene’s glands, squamous cell Bartholin’s glands), owing to the fact that their clinical and morphological characteristics are similar. In those cases histological characterization is required for definitive diagnosis (Table II) (1).
On histopathological examination Gartner cysts are found to be lined by low cuboidal, nonmucinous cells with a layer of smooth muscle in the basal membrane.

It is important to differentiate these cystic lesions from other vaginal non-cystic lesions, such as vaginal leiomyoma and from urethral injuries such as caruncle mucosa prolapse and diverticula (7).

The treatment of large or symptomatic cysts involves total surgical excision (7). Incomplete surgery or marsupialization have a higher rate of recurrence, as showed in 2 cases of our series. Other described treatments are the aspiration of the cyst and the injection of a 5% Tetracycline solution, reserved only for small cysts (8,9).

CONCLUSIONS

Vaginal wall cysts are a rare entity in common urological practice. Knowledge of the embryology of the female genital tract is essential for proper management.

The Gartner duct cyst may be associated with ureteral duplication and renal malformations; a study of the upper urinary tract using MRI is required in order to rule out these conditions.

The differential diagnosis with other vaginal cystic masses is complex due to its great clinical similarity, being necessary a histopathology of the cyst to establish the definitive diagnosis.

REFERENCES AND RECOMMENDED READINGS

(∗of special interest, **of outstanding interest)