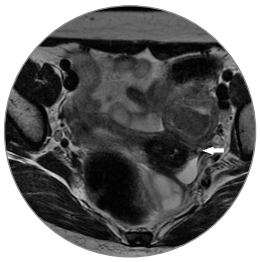

Herlyn Werner Wünderlich Syndrome. Presentation of Case and Review of Literature

Síndrome de Herlyn Werner Wünderlich. Presentación de caso y revisión de literatura

Maricela Fuentes Lizarazo[1]
Crhistian de Arco Espinosa[2]

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Summary

Herlyn Werner Wünderlich Syndrome is a rare and undiagnosed mullerian malformation, characterized by the triad of clogged hemivagina, ipsilateral renal agenesis and didelphic uterus; its diagnosis is usually late due to the unspecific symptomatology it produces: abdominal pain, dysmenorrhea and palpable abdominal mass secondary to hematocolpos, causing serious changes in fertility. The use of diagnostic images such as ultrasound, tomography and magnetic resonance imaging is essential to diagnose this type of anomaly. The case of a 12-year-old patient with this condition and a review of the literature are presented.

Resumen

El síndrome de Herlyn-Werner-Wünderlich es una malformación mülleriana rara y poco diagnosticada, que se caracteriza por la triada de hemivagina obstruida, agenesia renal ipsilateral y útero didelfo; su diagnóstico suele ser tardío debido a la sintomatología inespecífica que produce: dolor abdominal, dismenorrea y masa abdominal palpable secundaria a hematocolpos. Esta entidad ocasiona graves alteraciones en la fertilidad. El uso de imágenes diagnósticas, como ecografía, tomografía y resonancia magnética, es imprescindible para diagnosticar esta anomalía. Se presenta el caso de una paciente de 12 años con esta condición y una revisión de literatura.

Introduction

Herlyn-Werner-Wünderlich syndrome is a rare type of Müllerian malformation characterized by the triad of obstructed hemivagina, ipsilateral renal agenesis and didelphic uterus, first described by Purslow in 1922 (1). Müllerian malformations are a group of rare and underdiagnosed entities that cause nonspecific symptomatology in adolescents which, if undetected, can cause alterations in fertility and adverse obstetric outcomes (2).

The incidence of this syndrome is unknown because most of the patients are asymptomatic; however, it is estimated that for Müllerian anomalies in general it is 2-3% and the Herlyn-Werner-Wünderlich syndrome represents 0.1-3.5% of these abnormalities (3). Currently, about 200 cases have been reported. Individually there is also variation in the incidence of each of the components of the classic triad; in the case of the didelphic uterus it is approximately 1/2,000 to 1/28,000; the incidence of unilateral renal agenesis is 1/1,100 and only occurs in 43% of cases and 25-50% of women affected by the syndrome have associated genital abnormalities (4).

It usually appears in adolescents, but most of them may have normal menses (5), so in most cases there is a delay in diagnosis and treatment (6); However, although most of the symptoms are non-specific, this syndrome is related to pelvic pain, which characteristically begins after menarche and is secondary to hematocolpos (7), recurrent and intense dysmenorrhea, palpable abdominal mass associated with hematocolpos or hematometra; exceptionally, it is related to infertility, fever or acute urinary retention (8). In addition, it is really difficult to reach an accurate diagnosis, since patients usually consume anti-inflammatory analgesics and oral contraceptives in the presence of dysmenorrhea and abdominal pain, which further reduces the diagnostic possibilities (9).

Case presentation

A 12-year-old female patient, with no pathologic antecedents, with long-standing abdominal pain associated with menstrual bleeding, consults the emergency department for clinical symptoms of 3 days of evolution consisting of abdominal pain predominantly in the

[1]Physician, Universidad Pedagógica and Technological Colombia. Tunja, Colombia.

[2]Radiologist, University of Buenos Aires. Buenos Aires, Argentina.

Department of Radiology, Regional Hospital Manuela Beltrán. Beltran Regional Hospital. Socorro, Colombia.

mesogastrium, associated with constipation and emesis; she reports to be menstruating, denies other associated symptoms, on physical examination there is pain on palpation in colicky frame, defense on superficial palpation without signs of peritoneal irritation. A hemogram, uroanalysis and abdominal ultrasound showed left renal agenesis and findings compatible with hematocolpos, so a multislice tomography urography without intravenous contrast medium (UROTAC) was performed, showing a single right kidney (white arrow) and a cystic image on the right side of the uterus (black arrow) (Figure 1).

Pharmacological management was started in order to reduce the symptoms caused by the hematocolpos; a CT scan of the abdomen and pelvis showed a single right kidney (white arrow) (figure 2) without conclusive findings in coronal slices, so no report was made, and therefore the need for evaluation by pediatric gynecology was considered; However, as the institution where the case was treated did not have such specialty, pharmacological management was continued to reduce the symptoms caused by hematocolpos.

At 17 months the patient was admitted again for outpatient gynecology consultation, she reported a decrease in abdomino-pelvic symptoms after pharmacological management; She brought an MRI report of the abdomen and pelvis in which the absence of the left kidney was observed, two ovaries of normal shape and contours, with multiple cystic images of high signal in T2 sequences, of variable diameter between 5 and 7 mm that occupy the ovarian stroma (figure 3), bicorne bicoli uterus with two endometrial cavities (white arrows) (figure 4). With these MRI findings, Herlyn-Werner-Wünderlich syndrome was diagnosed and pharmacological management was continued.

Discussion

The characteristic anomalies of this syndrome occur around the eighth week of gestation, due to the failure of the Müllerian ducts to develop or fuse (1), which generates its characteristic triad: didelphic uterus, obstructive vaginal septum and homolateral renal agenesis. The vaginal septum is a consequence of the lack of lateral fusion of the descending Müllerian ducts, which originates two hemivaginas. This malformation alters the normal drainage of hematic material, resulting in hematocolpos. The didelphic uterus occurs as a consequence of the lack of fusion of the paramesonephric ducts, and results in two uterine cavities each with a tube. Finally, there is ipsilateral renal agenesis, which is due to altered development of the caudal portion of one of Wolf's ducts (7).

During childhood, patients with the syndrome are asymptomatic; however, during adolescence it manifests itself in a non-specific manner. The main symptom is cyclic pelvic pain which may be associated with normal menstrual pain; however, this type of pain is usually recurrent and progressive, secondary to hematocolpos (10). A large number of patients are underdiagnosed because of the absence of irregularities in the menstrual cycle, generally one of the uteri is not obstructed and is functional. On the other hand, patients with menstrual irregularities are often treated with oral contraceptives and anti-inflammatory drugs, with improvement of dysmenorrhea. However, in the long term they often develop abdominal pain secondary to hematocolpos (11). Patients rarely present with symptoms such as infertility, nausea, fever (8), or present with urinary retention and constipation 10-12 months after menarche (12). In some cases, the didelphic uterus is associated with reproductive alterations, miscarriages, preterm deliveries, placental dysfunction (13), as well as with pyosalpinx, piohematocolpos, pelviperitonitis, endometriosis and pelvic adhesions (9).

Among the differential diagnoses, some anomalies of uterine development should be taken into account, such as bicornuate uterus, unicornuate uterus with contralateral rudimentary non-communicating horn, imperforate hymen and hypoplasia or agenesis of the uterine cervix (7). Early diagnosis can prevent complications related to retrograde flow and subsequent endometriosis, and preserve fertility (14).

Although this syndrome is discovered shortly after menarche, it is convenient to suspect Müllerian alterations in case of findings such as multicystic dysplastic kidney or renal agenesis in a fetus (15).

The most widely used diagnostic imaging technique in gynecology is transvaginal ultrasound. It is safe, easily accessible and inexpensive. It allows the differential diagnosis of adnexal and endometrial pathology (16). Its use should be considered first line in most clinical scenarios (17); however, there is a need to complement it with other imaging methods in complex pathologies, as in the case of Herlyn-Werner-Wünderlich syndrome. CT is often used in cases of nonspecific acute lower abdominal or pelvic pain, useful in the differential diagnosis of gynecologic emergencies. MRI is conclusive in most cases and can currently be considered the test of choice in the differentiation of congenital, inflammatory and tumorous gynecological pathologies (18), since it allows the characterization of the content of the endometrial and cervical canal, in case the presence of a septate uterus is suspected. Its accuracy in the diagnosis of uterine malformations has been well established, and in some series it is up to 100% (19). Despite the importance of both CT and MRI, their use should be restricted to specific conditions, especially to characterize lesions that are not fully evaluable by ultrasound. Laparoscopy can help to quickly distinguish between a single or duplicated uterus; however, it is not recommended as a standard diagnostic method (12). It is useful to confirm the diagnosis when imaging is inconclusive (20).

Most Müllerian anomalies do not require treatment. In this syndrome, management usually consists of excision of the obstructed hemivagina in order to relieve pelvic pain and hematocolpos. Surgical management is carried out in two stages, in the first stage the surgery aims to drain the hematocolpos and the next stage seeks to remodel the vagina (11). Currently, the aim is to reduce the need for reinterventions in order to minimize the risk of postoperative obstructions and the need to use vaginal molds and dilators (21). Total or unilateral hysterectomy may be considered in cases in which resection of the septum is not possible or in patients with recurrent stenosis and severe uterine infection (14). Patients with a didelphic uterus have a high probability of having a satisfactory pregnancy; nevertheless, the rate of miscarriage is high, 74%, preterm delivery 22%, and cesarean section is required in 82% (20). In the case of adolescents, surgery can be postponed, which is not considered an immediate option, and treatment can be carried out with gonadotropin analogues to maintain amenorrhea (14).

The prognosis of these patients is good, although the major concern is that fertility may be severely affected; 80% of the patients may conceive, but there is a high probability of miscarriage and preterm delivery. Therefore, early diagnosis of these patients is of great importance in order to avoid the risk of endometriosis and infertility (14).

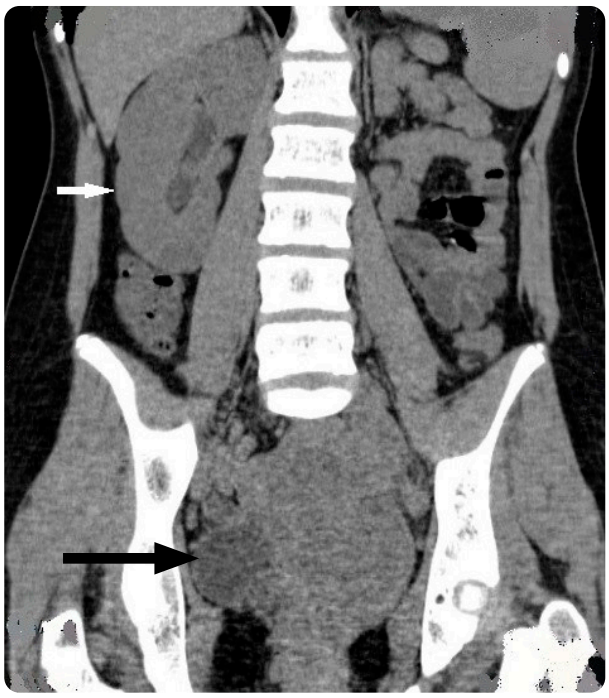

Figure 1. UROTAC, coronal section in soft tissue window: left renal fossa empty due to congenital agenesis. Slightly enlarged right kidney due to compensatory hypertrophy (white arrow), cystic image on the right side of the uterus (black arrow).

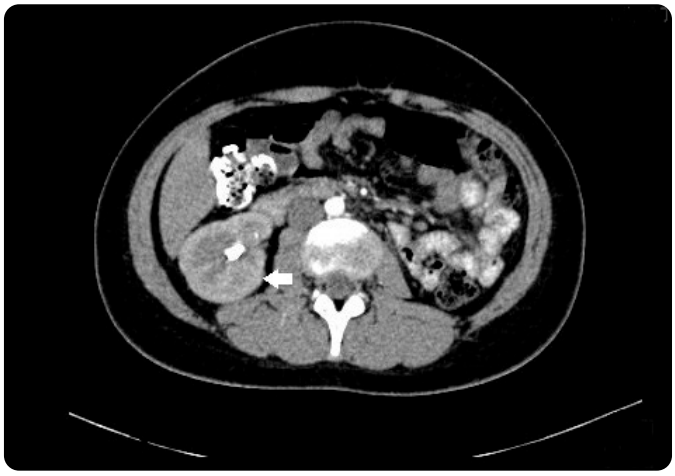

Figure 2. Abdominal and pelvis CT with oral and intravenous contrast medium, axial view: left renal fossa empty due to congenital agenesis. Right kidney with normal enhancement, without focal lesions (white arrow).

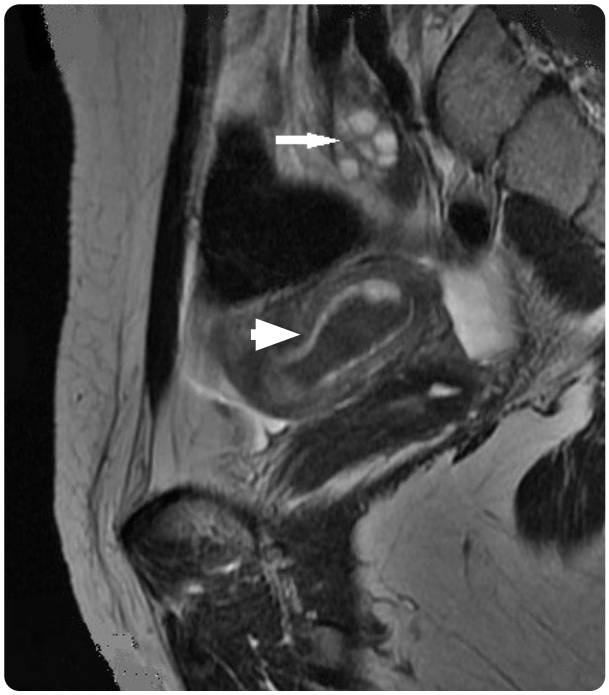

Figure 3. MRI of the abdomen and pelvis, sagittal view with T2-weighted image: two uterine cavities are observed, one of which with heterogeneous signal intensity in its interior due to hematic content (white arrowhead); the cervix and vagina have a normal appearance. In the upper part, one of the ovaries of normal morphology is identified, with multiple antral follicles in its interior (white arrow).

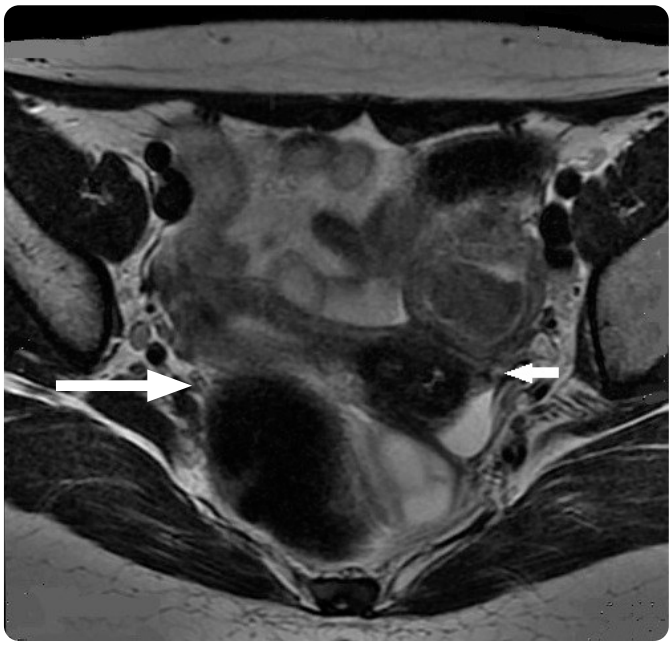

Figure 4. MRI of the abdomen and pelvis, axial view with T2-weighted image: two uterine cavities are observed, one towards the left hemipelvis and the other towards the right hemipelvis (white arrows).

Conclusions

In gynecology, the use of diagnostic images such as CT and MRI, methods of extraordinary resolution, are used for complex cases with the aim to resolve doubts that arise in conventional ultrasound. Their diagnostic indexes are similar to ultrasound in many of the benign pathologies that generate pelvic pain.

In the case of Herlyn-Werner-Wünderlich syndrome, a complex anomaly of the female reproductive system, which is usually diagnosed late due to its non-specific symptoms, the use of diagnostic imaging allows finding the triad that characterizes it. It is suspected in a conventional ultrasound, but the definitive characterization should be by MRI.

Its initial treatment focuses on reducing pain with hormonal supplementation and, subsequently, on resection of the vaginal septum and drainage of the hematocolpos in order to minimize adverse effects on the fertility of the patients, reducing miscarriages and preterm deliveries.

Currently, the selection and correct use of the different imaging methods available is one of the pillars for proper diagnosis in gynecology; however, the use of each one should be restricted to specific conditions.

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Correspondence

Maricela Fuentes Lizarazo
Carrera 9 # 11-26, local 202
San Gil, Santander, Colombia
mari_fuen@hotmail.com

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