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CASE REPORT

A Rare Case Report: Herlyn-Werner-Wunderlich Syndrome (HWWS) seen with Primary Amenorrhea and Cervical Agenesis

Primer Amenore ve Servikal Agenezi ile Görülen Herlyn-Werner-Wunderlich Sendromu (HWWS) Nadir Bir Olgu Sunumu

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ABSTRACT

The classic triad of Herlyn-Werner-Wunderlich syndrome includes blind hemivagina, uterine didelphys and ipsilateral renal agenesis. Herlyn-Werner-Wunderlich syndrome is a variant of Mullerian duct anomalies. Clinical presentation of the Herlyn-Werner-Wunderlich syndrome is usually accompanied by severe dysmenorrhea secondary to hematometrocolpos beginning with menarche and palpable pelvic mass. Early diagnosis and treatment are important in protecting the patient's fertility and preventing complications in the long term. In this study, when a 13-year old patient from the pediatric age group was being investigated for the pelvic mass, HWWS confirmed by MRI was identified. After the patient and his family were informed, and their consent was taken, the diagnostic laparoscopy was performed. Subsequently, after hematometra was removed by paravaginal repair, her complaints were resolved. The patient was followed up regarding fertility and endocrine functions, and a second operation could be performed in accordance with her age. This syndrome should be kept in mind in pediatric and adolescent patient groups who are investigated for severe dysmenorrhea, primary amenorrhea or pelvic mass.

Keywords: *mullerian duct anomaly, uterus didelphys, hematometra, ipsilateral renal agenesis*

ÖZET

Herlyn-Werner-Wunderlich sendromunun klasik triadı kör hemivagina, uterin didelphis ve ipsilateral renal agenezidir. Müllerian kanal anomalilerinin bir varyantıdır. Sebebi ve etiyopatogenezi bilinmemektedir. Klinik prezentasyonu genellikle menarj ile başlayan ve hematometrokolposa sekonder gelişen şiddetli dismenore ve ele gelen pelvik kitle şeklindedir. Erken tanı ve tedavi hastanın ilerideki fertilitesinin korunmasında ve komplikasyonların önlenmesinde önemlidir. Bu çalışmada 13 yaşında bekar pediatrik yaş grubundan hastanın pelvik kitle nedeniyle araştırılması yapılırken MRG ile tanısı kesinleştirilmiş HWWS olgusu tespit edilmiştir. Hastaya ve ailesine bilgi verilerek onamları alınmış ve diagnostik laparoskopi yapılmıştır. Daha sonra paravaginal onarım ile hematometra boşaltılmış ve şikayetleri giderilmiştir. İlerideki fertilite ve endokrin fonksiyonlar açısından takibe alınmıştır ve ikinci bir operasyon yaşına uygun olarak yapılabileceği yönünde fikir bildirilmiştir. Bu sendrom şiddetli dismenore, primer amenore veya pelvik kitle nedeniyle araştırılma yapılan pediatrik ve adelosan hasta gruplarında akılda bulundurulmalıdır.

Anahtar Kelimeler: *müllerian kanal anomalisi, uterus didelphis, hematometra*

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INTRODUCTION

Herlyn-Werner-Wunderlich syndrome (HWWS) is a rare form of Mullerian duct anomalies and a syndrome with the triad of uterine didelphys, blind hemivagina and ipsilateral renal agenesis. HWWS is also called as OH-VIRA syndrome (obstructive hemivagina, ipsilateral renal agenesis). HWWS was first described in 1922, and its incidence was approximately 0.1-3.8% (1). HWWS develops due to lateral and vertical fusion anomalies of the Mullerian ducts at about the 9th gestational week (2) and clinically presents as initiation with menarche and progressively increased severe dysmenorrhea secondary to hematocolpos. Although ultrasonography (USG) is the first choice for investigation, magnetic resonance imaging (MRI) is recommended for definite diagnosis. In this study, when the 13-year old patient from the pediatric age group was being investigated for the pelvic mass, HWWS case confirmed by MRI was identified.

THE CASE

A 13-year-old single case was referred to the Department of Gynecology and Obstetrics in the university hospital as a multidisciplinary center because the presence of pelvic mass detected in the external center and severe abdominal pain. According to the detailed anamnesis, the patient was diagnosed with primary amenorrhea. She pointed out that she had the complaint of abdominal pain for the last one year and this complaint did not pass for the last one month, and its severity increased gradually. Suprapubic tenderness and normal external genitalia were observed on physical examination. Vaginal examination was not performed because she was a maiden. Bilateral ovaries were detected as normal during USG. An approximately 13 cm pelvic mass compatible with hematoma and double endometrial echogenicity were observed. Duplex uterus appearance on MRI and enlargement in right side compatible with hematometra were reported that the right side was engorged (Figure 1a). Right kidney could not be observed (Figure 1b, 1c, 1d). It was observed that the left kidney was enlarged as a compensation respond. The left kidney was measured as approximately 11*6*6 cm. Routine laboratory tests were found to be normal (Figure 1e).

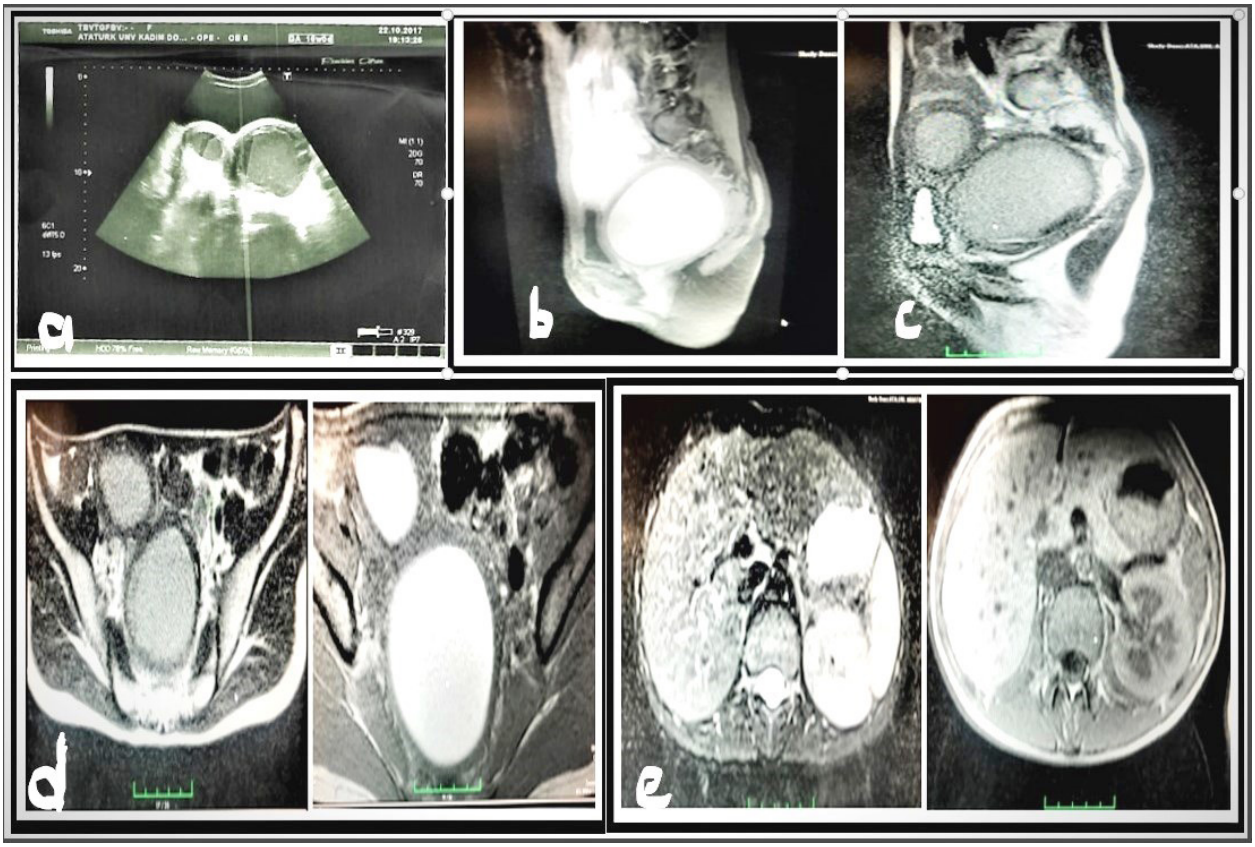

Figure 1a: Hematometra appearance of the uterus in transabdominal USG **Figure 1b-c:** Hematometra appearance in pelvic magnetic resonance imaging on sagittal plane **Figure 1d:** Uterus didelphys and dual cavity appearance in pelvic magnetic resonance imaging on axial plane **Figure 1e:** The right renal agenesis and enlarged enlargement of the left kidney (11*6*6 cm) were seen in pelvic magnetic resonance imaging on axial plane.

Laboratory tests, including complete blood count and beta human chorionic gonadotropin, were in normal range. Anti-Mullerian Hormone levels were 0.509 ng/mL, the CA125 level was 78 IU/mL, and FSH level was 6.5 mlU/mL. The patient was operated under general anesthesia in the lithotomy position. In the first stage, diagnostic laparoscopy was performed. The appearance of uterus didelphys was detected. Ovaries were seen in normal size (Figure 2a).

No additional pathology was found. Then, the evaluation of vaginal section was performed. Patient was inspected by vaginal ecarteurs after the consent was taken from the patient's family. It was seen that the vagina was blunt-ended without septum, and there was cervical agenesis. (Figure 2b) Transabdominal ultrasound-guided catheter entered into the uterine cavity from blunt the ended vagina. Approximately 1500 cc hemorrhagic fluid was drained from hematocolpos. In our case, blind hemivagina was not detected although it was a part of the classic triad of this syndrome. It was seen that the vagina was completely blunt ended. Cervix was not seen. No additional surgical procedure was performed on the patient. On the third postoperative day, the patient was discharged after she was cured. Her family was informed about the details of the patient's future status and fertility.

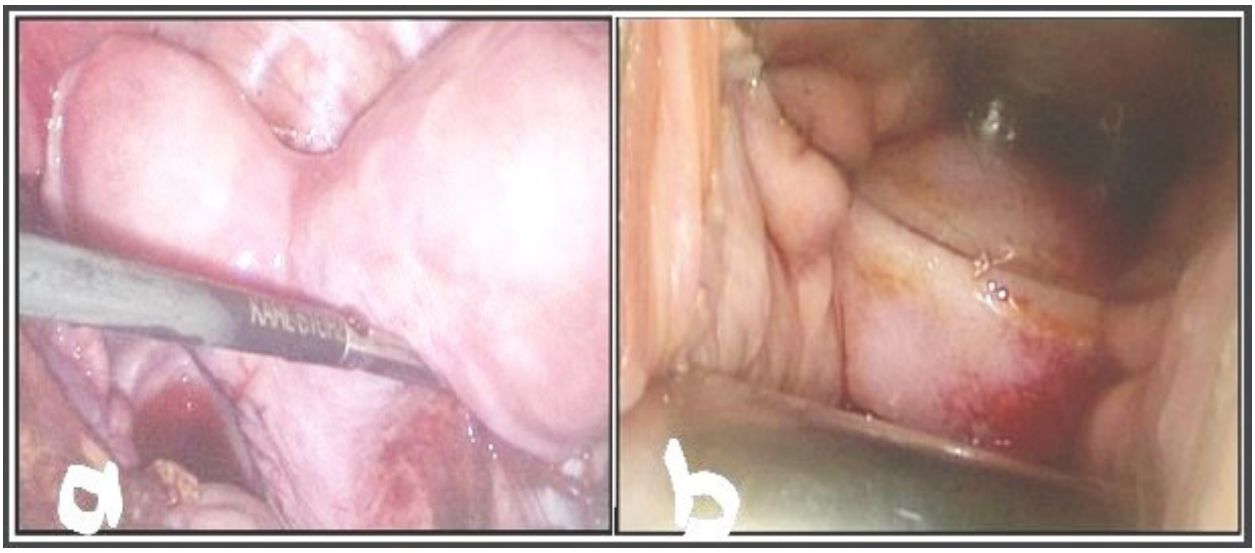

Figure 2a: Laparoscopic appearance of uterus didelphys and normal ovaries **Figure 2b:** The appearance of blunt ended vaginal tissue and cervical agenesis.

DISCUSSION

Müllerian ducts are developing from mesoderm form fallopian tubes, uterus, cervix and upper vagina. The development of the Müllerian duct occurs in three stages which are organogenesis, fusion and septal resorption. A disturbance at these stages leads to fusion anomalies of the Mullerian duct (3). Müllerian duct anomalies are accompanied by urinary anomalies with the rates of 20-25%. The kidney anomalies in the obstructive hemi-vagina and OHVIRA syndrome are twice as common on the right side of the body as compared to the left (4). The Wolf ducts are responsible for guiding the fusion of the Mullerian ducts. This theory also describes the mechanism of accompanying urinary system anomalies to Mullerian duct anomalies. If there is an anomaly in the development of Wolf duct, then, the kidney and collecting system cannot develop. Fusion anomalies may also develop in the uterus (5). The uterus didelphys is a complete fusion defect of Mullerian ducts as well as it constitutes approximately 11% of Mullerian anomalies, accompanied by transverse vaginal septum with a rate of approximately 75% (6). Müllerian duct anomalies are classified into six groups by Buttram and Gibbons. According to this classification, HWWS is the occurrence of type 3 Mullerian duct anomalies with mesonephric duct anomalies and vaginal septum.

HWWS usually presents in the form of a hematocolpos after puberty, a severe abdominal pain due to this condition and a pelvic mass detected by imaging. In general, there are also normal menstrual cycles in other cases reported in the literature. Our case presented with primer amenorrhea and it was seen that there was not a connection between vagina and uterus in which the cervix completely disappeared (7). Infectious conditions, such as pyohematocolpositis, pyosalpingitis, pyoperitonitis, retrograde menstruation secondary to endometriosis and pelvic adhesions are common complications (8, 9). The HWW syndrome may also be fully symptom-free. Karaca et al. reported a case with a symptom-free period that reached term pregnancy before vaginal septum resection (10). Over and endocrine functions are usually normal in patients with this syndrome because the development of ovaries is not related to the Mullerian duct. Also, post-operative hormone tests were normal in our patient (11).

When the genitourinary anomalies are suspected, planar urinal ultrasonography should be performed as first order. Pelvic magnetic resonance imaging provides accuracy close to 100% to detail the uterovaginal anatomy as well as laparoscopy or laparotomy as gold standard methods to confirm the diagnosis (12). In our case, we intend to present HWW syndrome that was established with a definite diagnosis by MRI.

Vaginal septum resection is frequently used in the treatment. Hysteroscopic septum resection may be considered in cases in which the patient and the family wish to preserve the hymen (13). Hemihisterectomy should be considered among the treatment options since vaginal septum resection is inadequate to prevent hematometra development or only septum resection cannot prevent obstruction in cases of cervical atresia (14). After taking the consent of the patient and his/her family because of the presence of cervical atresia in our case, a cannula was inserted into the cavity under abdominal ultrasonography after entering the uterus by the vaginal route, and then, drainage was performed. According to the relevant studies in literature, fertility with the rate of approximately 87% has been reported in patients with HWW syndrome treated surgically (15). Menstrual suppressive drug therapy should be applied to avoid hematometra and hematocolpos development in cases where surgical treatment cannot be performed.

In conclusion, HWW syndrome is a rare congenital anomaly with different clinical presentations and should be suspected in pubertal-prepubertal patients who present with severe dysmenorrhea or primary amenorrhea. Its diagnosis is established by physical examination, symptoms, USG and MRI. Once the patient and family are informed, appropriate treatment should be planned for the patient, and the protection of the future fertility situation must be considered.

REFERENCES

1. Aveiro AC, Miranda V, Cabral AJ, Nunes S, Paulo F, Freitas C. Herlyn-Werner-Wunderlich syndrome: a rare cause of pelvic pain in adolescent girls. BMJ Case Rep 2011;2011.pii:bcr0420114147.

2. Zurawin RK, Dietrich JE, Heard MJ, Edwards CL. Didelphic uterus and obstructed hemi-vagina with renal agenesis: case report and review of the literatüre. J Pediatr Adolesc Gynecol 2004;17(2):137-41.

3. Stassart JP, Nagel TC, Prem KA, Phipps WR. Uterus didelphys, obstructed hemivagina, and ipsilateral renal agenesis; the University of Minnesota experience. Fertil Steril 1992;57(4):756-61

4. Vercellini P, Daguati R, Somigliana E, Vigano P, Lanzani A, Fedele L. Asymmetric lateral distribution of obstructed hemivagina and renal agenesis in women with uterus didelphys: institutional case series and a systematic literature review. Fertil Steril. 2007;87:719–24.

5. Acién P, Acién M. Unilateral renal agenesis and female genital tract pathologies. Acta Obstet Gynecol Scand 2010;89(11):1424-31.

6. Junqueira BL, Allen LM, Spitzer RF, Lucco KL, Babyn PS, Doria AS. Müllerian duct anomalies and mimics in children and adolescents: correlative intraoperative assessment with clinical imaging. Radiographics 2009;29:1085-103.

7. Wu TH, Wu TT, Ng YY, Ng SC, Su PH, Chen JY, et al. Herlyn-Werner-Wunderlich syndrome consisting of uterine didelphys, obstructed hemivagina and ipsilateral renal agenesis in a newborn. Pediatr Neonatol 2012;53(1):68-71.

8. Fedele L, Motta F, Frontino G, Restelli E, Bianchi S. Double uterus with obstructed hemivagina and ipsilateral renal agenesis: pelvic anatomic variants in 87 cases. Hum Reprod 2013;28(6):1580-3.

9. Tong J, Zhu L, Lang J. Clinical characteristics of 70 patients with Herlyn-WernerWunderlich syndrome. Int J Gynaecol Obstet 2013;121(2):173-5

10. Karaca İ, Talar Ş, Atakan R, Yapça ÖE. Term Gebeliğe Ulaşan Herlyn-Werner-Wunderlich Sendromu: Nadir bir olgu sunumu. Erciyes Med J 2013;35:90-2.

11. Amesse LS, Ptaff-Amesse T. Congenital anomalies of the reproductive tract. In:Falcone T, Hurd WW, eds. Clinical Reproductive Medicine and Surgery 2007; 171(2):235-9

12. Del Vescovo R, Battisti S, Di Paola V, Piccolo CL, Cazzato RL, Sansoni I, et al. HerlynWerner-Wunderlich syndrome: MRI findings, radiological guide (two cases and literature review), and differential diagnosis. BMC Med Imaging 2012;12:4.

13. Wang J, Zhu L, Lang J, Liu Z, Sun D, Leng J, et al. Clinical characteristics and treatment of Herlyn-Werner-Wunderlich syndrome. Arch Gynecol Obstet 2014;290(5):947-50.

14. Zhu L, Chen N, Tong JL, Wang W, Zhang L, Lang JH. New classification of Herlyn-WernerWunderlich syndrome. Chin Med J (Engl) 2015;128(2):222-5

15. Sanghvi Y, Shastri P, Mane SB, Dhende NP. Prepubertal presentation of Herlyn-WernerWunderlich syndrome: a case report. J Pediatr Surg 2011;46(6):1277-80.