Case report

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Ultrasonographic diagnosis of congenital hydrometrocolpos in prenatal and newborn period: a case report

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Abstract

Our purpose is to present the ultrasonographic findings of a rare case of prenatally and postnatally congenital hydrometrocolpos secondary to imperforate hymen. By ultrasonography (US) at 38 weeks of gestation, a retrovesical, 60x43 mm pelvic cystic mass, was demonstrated in a female fetus. After delivery, US of the newborn revealed a 77x60 mm retrovesical, pear-shaped cystic structure with internal echoes, interpreted as congenital hydrometrocolpos. Mild pelvicaliectasis in the left kidney was associated. At physical examination imperforate hymen was detected and a hymenotomy was done. After the hymenotomy, complete regression of the hydrometrocolpos and of the left renal pelvicaliectasis was demonstrated sonographically.

Keywords: hydrocolpos, ultrasonography, prenatal, diagnosis

Rezumat

Scopul nostru este de a prezenta constatările ultrasonografice prenatale şi postnatale ale unui caz rar de hidrometrocolpos congenital intervenit după perforarea himenului. La 38 de săptămâni de gestaţie, la fetusul feminin a fost constatată ecografic o masă chistică pelvină retrovezicală cu dimensiunea de 60x43 mm. După naştere, ecografia noului născut a decelat o structură chistică în formă de pară, retrovezicală cu ecouri interne, cu dimensiunea de 77x60 mm interpetată ca fiind un hidrometrocolpos congenital. Asociat, s-a constatat dilatarea aparatului pielocalicial din rinichiului stâng. Examenului fizic a constatat perforarea himenului şi s-a aplicat himenotomia. După himenotomie, s-a demonstrat ecografic regresie completă a hidrometrocolposului şi a hidronefrozei renale

Cuvinte cheie: hidrocolpos, ultrasonografie, prenatal, diagnostic

Introduction

Congenital hydrometrocolpos is a pathologic condition in which the uterus and vagina are distended with sterile retained fluid (secretions and mucus), premenarcheally. Although hematocolpos is a relatively common condition, hydrometrocolpos is an infrequent condition [1]. The incidence of hydro/hematometrocolpos is 1 in 16,000 female births [2]. Reports of prenatal sonographic diagnosis of hydrometrocolpos secondary to imperforate hymen are rare [3–5]. We present a case of congenital hydrometrocolpos secondary to imperforate hymen and lay emphasis on its ultrasonographic appearances in the late prenatal period and early neonatal period, before and after surgical intervention.

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Case report

A 19-year-old primigravid woman was referred for further evaluation of an incidentally detected fetal abdominal cystic mass at 38 weeks of gestation. Three consecutive US examinations were performed with a Logic 200 Pro US device (General Electric Medical Systems, Seongnam, Gyeonggi-do, Korea), using 3–3.5 MHz convex probe, the first one being fetal US. The second one was done after the delivery and the last one was performed after surgical intervention (hymenotomy) for

imperforate hymen. In US examination of a female fetus, a large, oval, midline pelvic cystic mass with internal echoes, measuring 60x43 mm and showing posterior acoustic enhancement, was demonstrated posterior to the urinary bladder (fig 1). In the differential diagnosis of the cystic mass, hydrometrocolpos, ovarian cyst and anterior meningocele was considered. The morphology and volume of the urinary bladder was normal, though it was somewhat compressed by the cystic mass. No other fetal abnormality was demonstrated. The baby was delivered

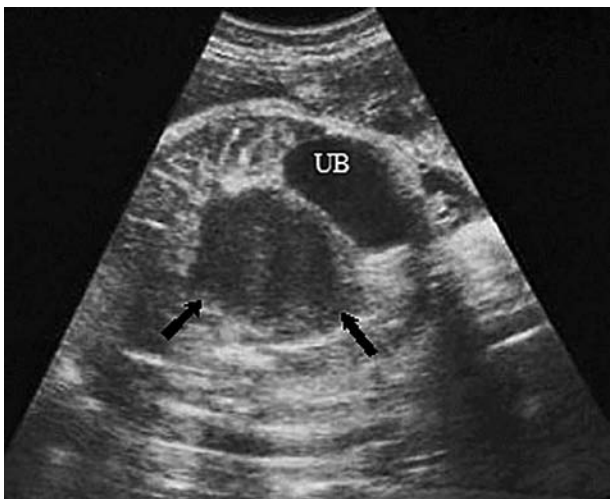


Fig 1. Fetal US, transverse oblique image. A large, hypoechoic, pelvic-retrovesical cystic mass with internal echoes (black arrows) was demonstrated, compressing the urinary bladder (UB).

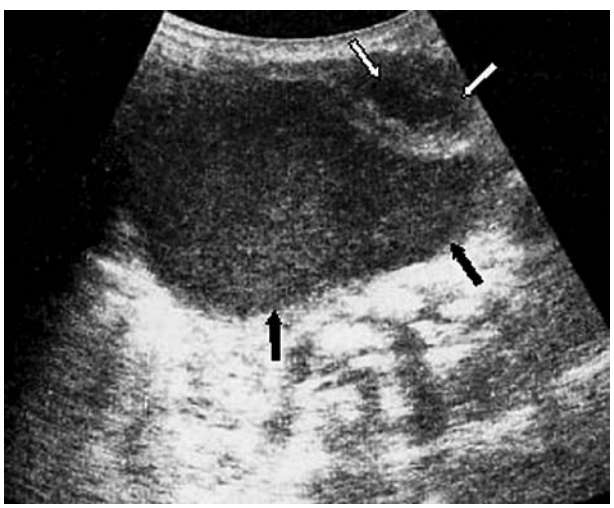


Fig 2. Abdominal US, mid-sagittal image. In a four-day-old newborn, US shows a large, pear-shaped, thick-walled, retrovesical cystic structure with internal echoes in the locations of uterus and vagina (black arrows), which was consistent with hydrometrocolpos (white arrows: urinary bladder).

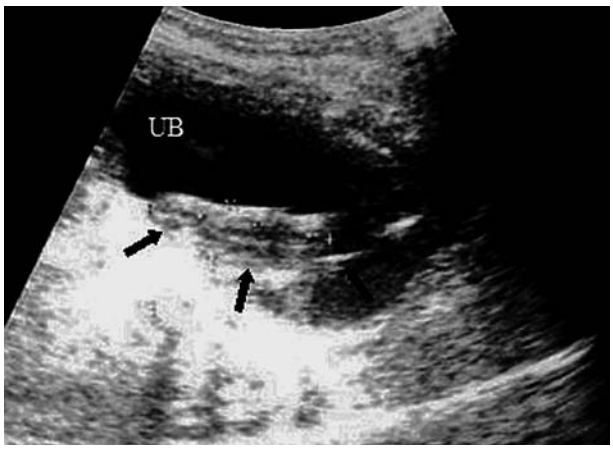


Fig 3. Abdominal US, mid-sagittal image. Control US examination four weeks after hymenotomy showed complete regression of the hydrometrocolpos where uterus and vagina were almost normal in size and appearance (black arrows: uterus, UB: urinary bladder).

by cesarean section 10 days after fetal US examination, at 40th week of gestation without any complication, with an Apgar score in normal limits, weighing 3500 gr. In the very first physical examination of the newborn, an abdominopelvic mass was detected. In the second US examination at fourth day postnatally a large, pear-shaped, thick-walled, midline, retrovesical cystic structure with internal echoes, measuring 77x60 mm was evidenced, leading us to make the diagnosis of hydrometrocolpos (fig 2). The pathology was associated with mild pelvicaliectasis in the left kidney, anteroposterior diameter of the renal pelvis measuring 6.5 mm, which was thought to be caused by the hydrometrocolpos compressing left ureter. The right kidney showed no pelvicalyceal dilatation. Physical examination revealed imperforate hymen as the etiology and surgical intervention (hymenotomy) was performed for the treatment. Four weeks after hymenotomy, complete regression of the hydrometrocolpos was demonstrated. The uterus and vagina were almost normal in size and appearance, the uterus measuring 33.6x10.9 mm (fig 3). Mild pelvicaliectasis in the left kidney disappeared and the infant was discharged in good health.

Discussion

Imperforate hymen is not only one of the etiologies of hematometrocolpos [2], but also the etiology of congenital hydrometrocolpos, as it was in our case. Some other congenital pathologies such as Spencer et al reported [1], may also be responsible for the development of congenital hydrometrocolpos. The authors mentioned three cases

of hydrometrocolpos, a three-month-old girl with atretic vagina without hymen; a five-month-old girl with atresia of the lower portion of the vagina and a two-day-old girl with extreme stenosis of hymen with no vaginal orifice [1].

Prenatally, in differential diagnosis of hydrometrocolpos, other pelvic cystic pathologies such as anterior meningocele, pelvic component of sacrococcygeal teratoma and adnexal cysts [2] can be considered. Hydrometrocolpos may be present as a part of McKusick-Kaufman syndrome which is an autosomal recessive multiple malformation syndrome characterized by vaginal atresia with hydrometrocolpos, polydactyly, congenital heart defects, and nonimmune hydrops fetalis [6]. The syndromes presenting the association of hydrometrocolpos should be taken into consideration and be ruled out in cases of congenital hydrometrocolpos, during prenatal and postnatal examinations. In our case, no other fetal abnormality was demonstrated in the prenatal US and no associated abnormality other than imperforate hymen, hydrometrocolpos and mild pelvicaliectasis in the left kidney was detected in the infant, both clinically and sonographically. Hydrometrocolpos as a complication of congenital imperforate hymen has been reported to cause severe renal compromise, abdominal ascites [7], acute urinary retention [8] and acute renal failure due to obstructive uropathy [9]. The association with mild hydroureteronephrosis bilaterally was also reported [10]. In our case, imperforate hymen and hydrometrocolpos as its complication was associated with only mild pelvicaliectasis in the left kidney, which disappeared after the hymenotomy.

Magnetic resonance imaging (MRI) was also used prenatally for the diagnosis of hydrocolpos secondary to imperforate hymen and for demonstration the bilateral hydroureteronephrosis as a complication [11]. In our case, US was able to demonstrate the fetal pelvic cystic mass in all planes which assisted in making the differential diagnosis.

For the treatment of hydrometrocolpos secondary to imperforate hymen, a hymenotomy has been reported to be an effective and conservative approach [12], as it was in our case.

In conclusion, if a large pelvic cystic mass is detected in fetus in prenatal US, congenital hydrometrocolpos should be considered in differential diagnosis beside other pelvic pathologies mentioned above. Prenatal MRI may be performed depending on clinical indication and severity of the situation but in all cases, a control US examination should immediately be performed after birth. In our case, US was sufficient in making the exact diagnosis of congenital hydrometrocolpos after delivery and in the follow-up of the infant after surgical operation to demonstrate complete regression of hydrometrocolpos.

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