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CASE REPORT

Imperforate hymen causing congenital hydrometrocolpos

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Abstract A 3-day-old girl in good health was referred to our department for the evaluation of an abdominal mass detected at birth. Prenatal ultrasound (US) examinations had shown no anomaly. US examination revealed the presence of a hypoechoic and corpusculated cystic formation of about 8 × 5 × 4 cm located in the mid region of the abdomen. The uterus was not visible and the kidneys were normal with no sign of hydronephrosis. The ovaries were normal. Physical examination confirmed US findings revealing the presence of a curved membrane which covered the vaginal opening. Based on these findings, the patient was diagnosed to have hydrometrocolpos. Hymenectomy was performed and about 100 ml of milky fluid was subsequently removed by aspiration. The patient presented no other congenital anomalies and US follow-up showed a normal structure of the uterus.

Keywords Imperforate hymen · Congenital hydrometrocolpos · Pelvic mass · Ultrasound

Riassunto Una neonata di 3 giorni, in buona salute, è giunta alla nostra osservazione per la valutazione di una massa addominale riscontrata alla nascita. I controlli ecografici prenatali erano negativi. L'esame ecografico ha mostrato la presenza di una formazione cistica a sede mediana ipoecogena corpuscolata di circa 8 × 5 × 4 cm. Non era visibile l'utero; i reni erano normali senza evidenza di idronefrosi. Ovaie normali. L'esame fisico della neonata, confermava il sospetto ecografico mettendo in evidenza la presenza di una membrana bombata che copriva l'introito vaginale sulla base del quale è stata fatta diagnosi di idrometrocolpo. Si è proceduto con un'imenectomia e successiva aspirazione di circa 100 ml di liquido lattescente. Non vi erano altre anomalie congenite presenti e il controllo ecografico successivo ha mostrato regolare struttura dell'utero.

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Introduction

Hydrometrocolpos is an accumulation of uterine and vaginal secretions as well as menstrual blood in the uterus and vagina. Usually this condition manifests at puberty caused by an obstruction of the female genital tract.

The most frequent cause of hydrometrocolpos is the presence of imperforate hymen due to failure of partial resorption of this membrane during the embryonic development; the incidence is 0.0014–00.1 % in full-term newborns [1, 2]. Congenital hydrometrocolpos is a rare event with an incidence of about 0.006 % [3]. We present the US features of hydrometrocolpos in a newborn girl before and after surgical treatment.

Description of the case

A 3-day-old girl born by Cesarean section at 38 weeks of gestation was referred to our department for the evaluation of an abdominal mass detected at US examination performed on the day of birth. The patient was otherwise in good condition and weighed 3.330 kg. Prenatal US examinations showed no anomaly.

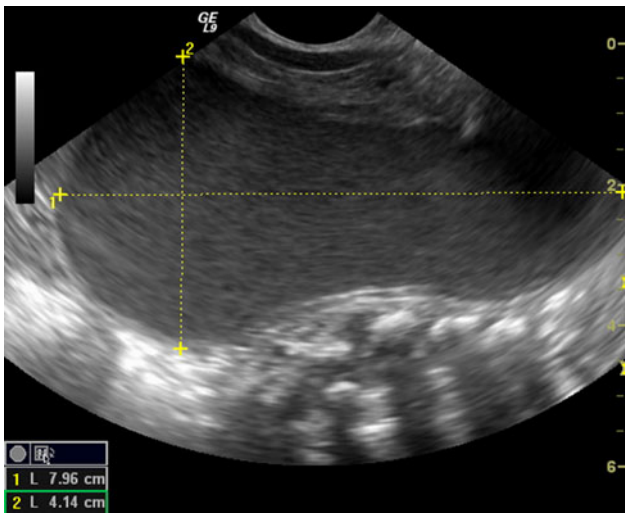

Fig. 1 Longitudinal scan reveals a large hypoechoic mass in the mid region of the abdomen extending from the upper middle to the lowest region

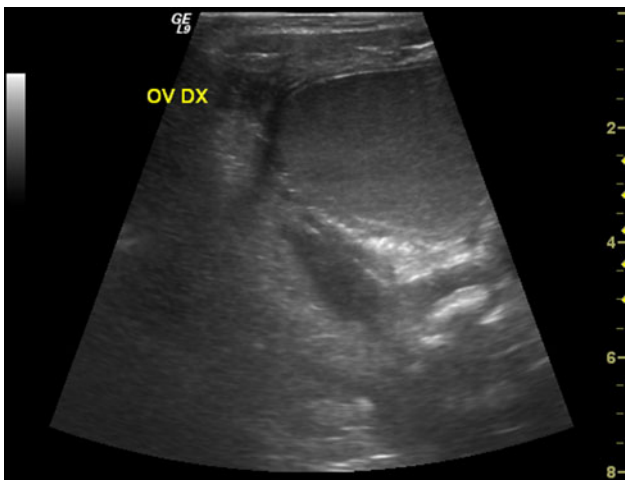

Fig. 2 Axial US scan shows the mass and the right ovary which is intact

US examination was carried out on GE Logiq 9 using a micro-convex 5–9 MHz probe. The image showed the presence of an inhomogeneous hypoechoic and corpusculated cystic formation of about 8 × 5 × 4 cm with well-demarcated margins; it was located in the mid region of the abdomen extending from the upper middle to the lowest region (Figs. 1, 2). The bladder was empty and compressed, the kidneys and ovaries were normal. The uterus was not visible.

Hydrometrocolpos was suspected and subsequently confirmed at physical examination of the external genitalia, which revealed the presence of a soft oval mass with an imperforate hymen at the vaginal opening. After incision of the hymenal membrane, approximately 100 ml of milky fluid was aspirated. Subsequent US imaging showed

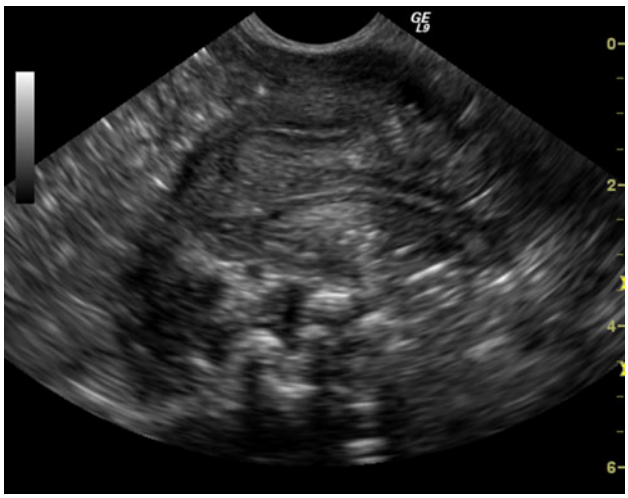

Fig. 3 Longitudinal pelvic US scan obtained after drainage

normal appearance of the uterus and vagina with no signs of other congenital anomalies (Fig. 3).

Discussion

Hydrometrocolpos is an unusual finding in newborn infants. It occurs when a genital tract obstruction is associated with accumulation of cervical and endometrial gland secretions.

This condition may be caused by congenital malformations of the genital tract such as vaginal atresia, transverse vaginal septum and imperforate hymen. It may also be associated with the McKusick–Kaufman syndrome, an autosomal recessive disorder characterized by vaginal atresia with hydrometrocolpos, polydactyly, congenital heart defects and non-immune mediated hydrops fetalis [4]. In the present case, imperforate hymen was the cause of hydrometrocolpos.

Imperforate hymen is a result of the hymen failing to rupture during the eighth week of gestation; it may be an isolated abnormality or associated with other malformations, such as imperforate anus, bifid clitoris, polycystic kidney.

As described in other cases [5], hydrometrocolpos is usually diagnosed prenatally as the cause of abdominal cystic mass. However, in the present case prenatal examinations were all negative.

Differential diagnosis of a perinatally identified abdominal mass should include ovarian cysts, intra-abdominal sacrococcygeal teratoma (type IV), neuroblastoma, mesoblastic nephroma, bowel duplication, genital-urinary anomalies and anterior sacral meningocele.

Hydrometrocolpos may cause urinary stasis and acute renal failure due to obstructive uropathy [6, 7]. In the present case, physical and US examinations showed that

both kidneys were normal with no sign of hydronephrosis and that there were no other congenital anomalies.

In hydrometrocolpos caused by imperforate hymen, hymenectomy has proved to be an adequate, conservative treatment [8]. A peculiar phenomenon was in the present case the amount of fluid removed (about 100 ml).

In conclusion, although hydrometrocolpos is a rare event, this disorder should be kept in mind if pre- and/or postnatal examinations reveal the presence of a pelvic mass.

Conflict of interest The authors have no conflict of interest to declare.

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