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CASE REPORT

Congenital Fetal Hydrocolpos with Vaginal Atresia

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ABSTRACT

We report an unusual case of congenital hydrocolpos diagnosed at the third trimester. The antenatal diagnosis was not conclusive as the mass was very central and arising from the pelvis toward the fetal abdomen between the rectum and fetal urinary bladder. Noninvasive prenatal testing (NIPT) showed no abnormal chromosomes. Postnatal abdominal ultrasound was not conclusive. The final and correct diagnosis of congenital hydrocolpos and urogenital sinus with vaginal atresia was made on postnatal magnetic resonance imaging (MRI). Patient was examined under general anesthesia; there was a single genital opening and a normal anus (no vaginal opening). Both cystoscopy and tube vaginostomy were performed afterward to drain the hydrocolpos. The postnatal period was uneventful.

Keywords: Congenital anomalies, Hydrocolpos, Urogenital sinus, Vaginal atresia.

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ANTENATAL HISTORY

Miss A was a 34-year-old female multigravida patient with nonconsanguineous marriage, who was seen for the first time at 37w2d of gestation at the Feto-Maternal Center (FMC). The FMC is the only private fetal medicine unit in the State of Qatar and is affiliated with Weill Cornell Medicine, Qatar. The patient's antepartum course had been normal except for a diagnosis of deep vein thrombosis during pregnancy, which resulted in her being on Clexane. Both her past medical and surgical histories were noncontributory. She has had two prior pregnancies, both resulted in normal vaginal deliveries at term of healthy babies with no pre- or postnatal complications. Her gynecologic history is noncontributory. She claimed that her early scans were normal at both the first and second trimesters. She was referred to FMC because of newly discovered central mass in the fetal abdomen.

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PRENATAL ULTRASOUND FINDINGS

A transabdominal ultrasound scan was done using GE ultrasound machine E10. A single cephalic intrauterine pregnancy was detected. The amniotic fluid was normal in amount and the placenta was anterior high.

A unilateral cystic mass was noted, measuring 5.7 cm × 6.4 cm which contained thick fluid. Fetal bladder was visualized and both umbilical arteries were seen surrounding the fetal bladder. Both kidneys were visualized and showed mild enlargement. It was difficult to visualize the fetal uterus.

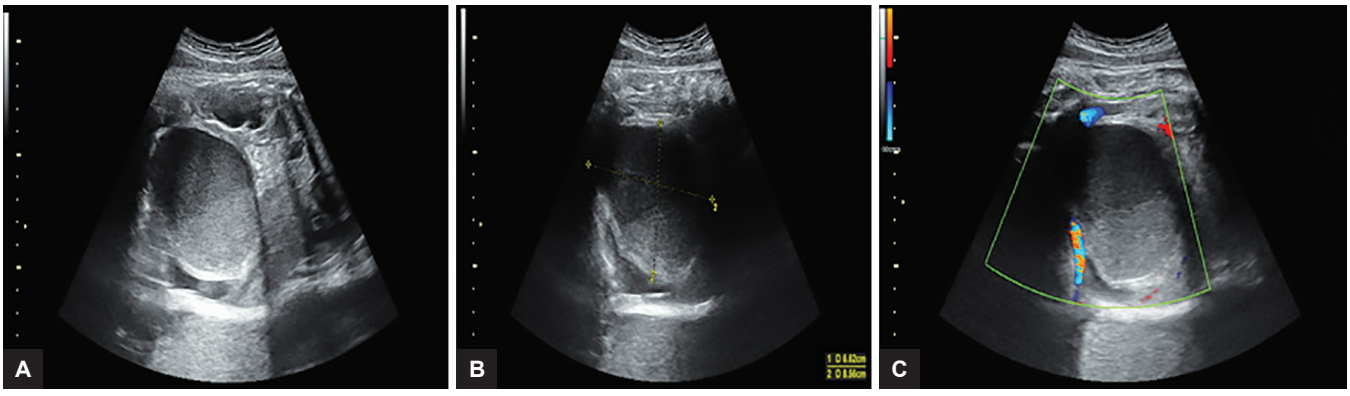
The scan picture was securitized carefully (Fig. 1). Based on the characteristics of the mass, a differential diagnosis was made, which included ovarian cyst, mesenteric cyst, and cystic teratoma. The patient was asked to return in 2 weeks for a follow-up and an NIPT was arranged.

Noninvasive prenatal testing revealed normal chromosomes. Ultrasound findings at the follow-up visits did not change compared with the previous scan, and no change in size of the cystic mass was detected. Fetal growth, liquor, and ultrasound Doppler were all normal. Fetal biometry measurements and fetal growth were all appropriate for gestation. Patient was reassured and asked to follow up in 1 week.

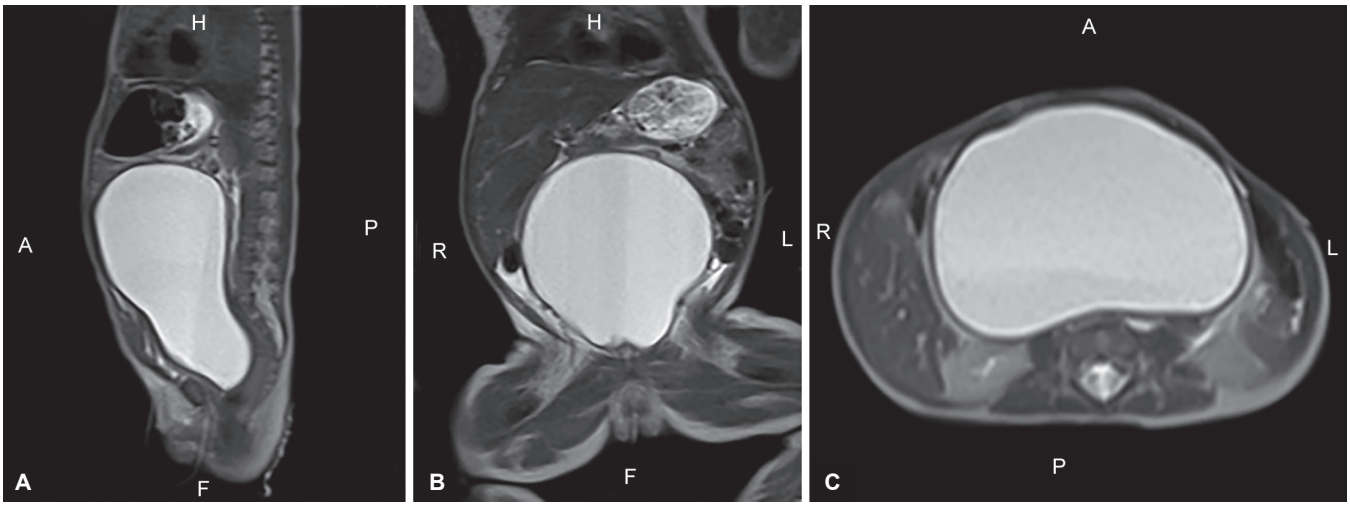
LABOR AND DELIVERY OUTCOME

The patient presented at 39w3d at the labor and delivery with labor pain for 1 day. The patient was vitally stable. Her pelvic exam showed an open cervix at 1 cm, 80% effaced, and cephalic presentation, at −3 station. The patient was admitted to the ward for observation, and the neonatology team was informed.

This pregnancy resulted in a live birth of a 3.44-kg female baby via vaginal delivery. The baby's Apgar scores were 9 and 10 at 1 and 5 minutes respectively. The baby had no neonatal complications aside from the abdominal mass that was detected earlier. The baby was admitted to the neonatal intensive care unit (NICU) for further investigations. The delivery was complicated by a 1st degree perineal tear, and the patient underwent a vaginal repair.



Figs 1A to C: Antenatal ultrasound shows a cystic mass, and the mass is central, unilateral, and contains thick fluid level. The bladder is seen separately



Figs 2A to C: MRI view with large pelvic abdominal cystic mass with fluid level arising from the pelvis between the urinary bladder and the rectum (hydrocolpos). There is a small similar fluid-filled lesion in front of the big mass. This is a small mass and represents a collapsed urinary bladder with Foley's catheter

POSTNATAL CARE AND ULTRASOUND FINDINGS

Physical examination of the neonate showed normal anus and rectum, but no vaginal opening. Postnatal abdominal ultrasound showed a large unilocular cystic mass lesion occupying most of the pelvis and abdomen with turbid fluid contents. No solid or calcified contents were detected. The liver, gallbladder, spleen, right kidney, and both suprarenal glands all appeared normal. The left kidney showed mild hydronephrosis, and the left renal pelvis measured 9 mm, but no obstruction was noted. The image was suggestive of dermoid cyst, and an MRI study was recommended.

POSTNATAL MRI FINDINGS

An MRI abdomen was performed and showed a large pelvic abdominal cystic lesion with fluid level, measuring 5.7 cm × 8.4 cm × 10 cm. The mass had a low signal on T1-weighted image and a high signal on T2-weighted image. There was a similar fluid-filled lesion in the dome of the cyst, corresponding to a dilated vagina, with a minimal dilation of the uterus.

The noted lesion extended from the pelvis between the rectum and the collapsed urinary bladder, with a Foley's catheter seen in place. The measured distance between the lesion and the vaginal orifice was about 2.3 cm. The ovaries were not clearly visualized. Both kidneys were visualized with left-sided hydroureteronephrosis. The liver, biliary system, spleen, and the visualized part of the spine all appeared normal. The mentioned findings were consistent with congenital hydrocolpos (Fig. 2).

SURGICAL OUTCOME

The newborn was admitted to the NICU shortly after delivery and underwent corrective surgery at postdelivery day 4. The final diagnosis was congenital hydrocolpos and urogenital sinus with vaginal atresia. An examination under anesthesia was performed, which showed a single genital opening and a normal anus (no vaginal opening). Both cystoscopy and tube vaginostomy were performed

afterward to drain the hydrocolpos. The patient remained stable after the operation and was discharged with instructions to follow up in clinic.

DISCUSSION

Hydrocolpos is a rare congenital condition that results in a cystic dilatation of the vaginal canal and fluid accumulation. The incidence is less than 1 per 30,000 births.[1] This condition is due to both genital vaginal obstruction and increased glandular secretions that are secondary to the stimulation by maternal estrogen.[2] This condition is sporadic in nature; however, in rare occasion, it may be due to administration of dexamethasone antenatally for conditions, such as congenital adrenal hyperplasia.[3,4]

The vaginal obstruction is usually due to vaginal atresia, imperforated hymen, or a congenital fold that acts as a valve in a stenotic vaginal canal. Newborns often present with a mass in the lower abdomen and a cystic bulge at the introitus or an imperforated hymen.[5] These abnormalities usually cause urinary obstruction due to the pressure on the urogenital sinus and the accumulation of urine leading to hydroureter and hydronephrosis.[6-8]

Due to the complications that might arise from such abnormalities, it is essential to diagnose and treat such cases early. Currently, the wide availability of prenatal ultrasound makes the diagnosis possible prenatally. Early diagnosis is associated with an improved prognosis and reduced complications due to obstructive uropathy, as most patients are cured by a simple transperineal drainage procedure.[7] Fetal MRI studies were done in our case postdelivery, which is an excellent modality in differentiating pelvic masses as it provides essential details that guide diagnosing such cases.[8-10]

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