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Isolated foetal ascites

單獨性胎腹水

The prenatal diagnosis and perinatal outcome of two patients with isolated foetal ascites compatible with chyloperitoneum is described. The foetal ascites resolved spontaneously after delivery with good perinatal outcome in both cases. A good prognosis can be anticipated in such cases. Antepartum and intrapartum interventions are seldom necessary.

本文報告了兩名孕婦的產前診斷和圍產期結果，病人的胎兒呈現單獨性腹水/乳糜性腹膜。在這兩宗病例中，病人於分娩後胎兒的腹水症狀自然地消失，並有良好的圍產期結果。這種病例可期望有良好的預後結果，極少數病人需要於分娩前和分娩中接受宮內醫治。

Introduction

Isolated foetal ascites due to chyloperitoneum is a distinct entity from foetal ascites associated with immune and non-immune hydrops fetalis, congenital infections, gastrointestinal, genitourinary, and cardiac abnormalities. Isolated foetal ascites carries a much better prognosis than the other entities.[1-3] The diagnosis is usually made by excluding other causes of foetal ascites. If paracentesis is performed either before or after delivery, findings of a low protein concentration, negative cultures, and a predominant lymphocyte count of more than 90% suggest the diagnosis of chyloperitoneum.

We report two cases of isolated foetal ascites compatible with chyloperitoneum. These two cases demonstrate the self-limiting nature of this condition and the favourable perinatal outcome.

Case reports

Case 1

The patient, a Chinese woman aged 24 years, was in her first pregnancy. Foetal ascites was first noticed by her private obstetrician on ultrasound examination at 16 weeks' gestation. Amniocentesis was performed, with chromosome study of the amniocytes showing a 46,XY karyotype. She was subsequently referred to the Department of Obstetrics and Gynaecology at Tsan Yuk Hospital at 21 weeks' gestation. Ultrasound examination showed isolated foetal ascites (Fig 1), and the abdominal circumference measured 25.6 cm (more than 2 SD above gestational age). The amniotic fluid volume was normal. No subcutaneous oedema, or pericardial or pleural effusions were evident. There was no sonographic evidence of foetal anaemia, such as cardiac and placental enlargement. The foetal stomach, bowels, kidneys, and bladder appeared normal. Percutaneous foetal paracentesis yielded 120 mL of yellowish fluid. Microscopic examination of the ascitic fluid revealed a lymphocyte count of 98%. Viral studies were negative. The diagnosis was consistent with

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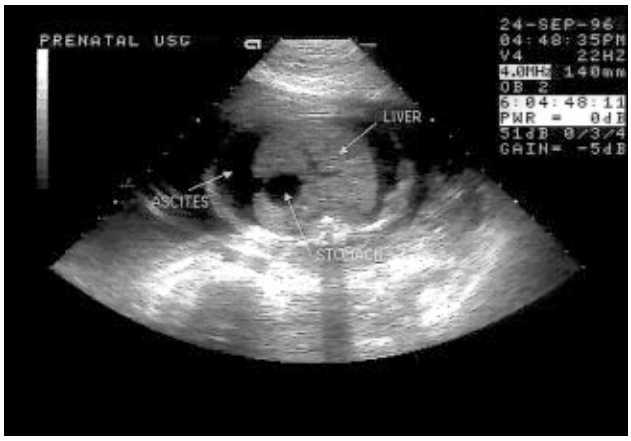

Fig 1. Ultrasound examination showing a transverse view of the foetal abdomen at 21 weeks' gestation

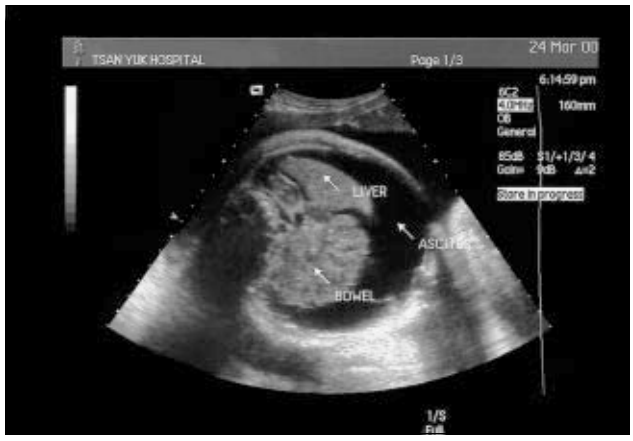

Fig 2. Ultrasound examination showing a transverse view of the foetal abdomen at 37 weeks' gestation

chyloperitoneum. Maternal investigations showed a Rhesus positive blood group, a negative antibody screen, normal mean corpuscular volume, a non-reactive venereal disease reference laboratory test, and a negative toxoplasmosis, rubella, cytomegalovirus, herpes (TORCH) and parvovirus screen.

Foetal ascites reaccumulated rapidly shortly after the paracentesis and remained constant throughout the subsequent antenatal course, as assessed by serial ultrasound examination. The amniotic fluid volume was normal. No other hydropic changes developed. The foetal abdominal circumference was enlarged to 36.8 cm at 36 weeks' gestation (more than 2 SD above gestational age). Spontaneous onset of labour occurred at 37 weeks' gestation. A baby boy weighing 3705 g, with good Apgar scores, was delivered vaginally without complications. There was no abdominal dystocia during delivery. The infant did not demonstrate respiratory distress after birth. The ascites gradually resolved over a 2-week period. No other cause for the foetal ascites was found. The child is now 3 years old and healthy.

Case 2

The patient, a Chinese woman aged 31 years, was in her second pregnancy. She had a healthy 3-year-old son. The antenatal course of the present pregnancy had been uneventful until 37 weeks' gestation, when the uterus was found to be large for gestational date. Earlier scans did not show any foetal abnormality. The patient was asymptomatic. Ultrasound examination showed massive foetal ascites (Fig 2) with an abdominal circumference of 38.6 cm (more than 2 SD above gestational age), and polyhydramnios with an amniotic fluid index of 22 cm (95th percentile). No other foetal abnormalities were seen. The biophysical profile was normal. Foetal paracentesis was not performed. Other relevant investigations were completed as for Case 1. No cause for the foetal ascites was found. The foetal ascites and amniotic fluid index remained unchanged on subsequent ultrasound examination at 39 weeks' gestation.

Spontaneous onset of labour occurred at 39 weeks' gestation. A baby girl weighing 3540 g with good Apgar scores was delivered vaginally without complications. Abdominal ultrasound examination of the baby confirmed the presence of ascites. Gastrointestinal contrast imaging studies did not reveal any abnormality. The ascites gradually resolved over 2 weeks. The neonatal course was otherwise uneventful.

Discussion

Isolated foetal ascites can be caused by chyloperitoneum, gastrointestinal abnormalities such as meconium peritonitis, genitourinary abnormalities, such as ruptured bladder, cardiovascular abnormalities including cardiac arrhythmia, and congenital infections (TORCH, parvovirus). Furthermore, apparent isolated foetal ascites may be an early sign of immune or non-immune hydrops fetalis. Serial ultrasound and Doppler studies allow the differential diagnosis of almost all of these conditions. In the absence of other ultrasound abnormalities and following a negative viral screen, the most probable diagnosis is that of chyloperitoneum, as in the two cases presented. Foetal paracentesis to determine the predominant lymphocyte count in the ascitic fluid may not be necessary from a diagnostic point of view, taking into account the associated risks of the procedure. Retrospectively, it would appear that the paracentesis performed in Case 1 did not affect management of the case and could thus have been avoided.

Antenatal paracentesis has been suggested as a useful means of improving neonatal pulmonary

function,[4] and of avoidance of abdominal dystocia if performed before vaginal delivery.[5] The ascitic fluid, however, usually reaccumulates rapidly after paracentesis. To avoid repeated paracentesis, Fung et al[6] inserted an abdomino-amniotic shunt into a foetus with isolated ascites and symptomatic polyhydramnios. In asymptomatic patients, however, antepartum and intrapartum paracentesis, and abdomino-amniotic shunting may not be necessary even if there is evidence of polyhydramnios, as seen in Case 2. Expectant management can be adopted, with serial ultrasound monitoring, with the aim of allowing the spontaneous onset of labour and vaginal delivery.

Foetal chyloperitoneum can result from a transient blockage or defective development of the localised lymphatic system. The ascites typically resolves prior to, or shortly after delivery.[2] Perinatal outcomes for the two cases presented were excellent. In both cases, the foetal ascites resolved spontaneously within 2 weeks of delivery.

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