

Isolated Fetal Ascites

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Abstract

When foetal ascites is found alone (i.e., without other signs of hydrops), it may represent a separate problem requiring a different management strategy, leading to a different outcome. A 24-year-old primigravida was referred to our institution at 27 weeks of gestation with a diagnosis of isolated foetal ascites. No other pathology was detected on ultrasonography or a laboratory examination. The patient delivered a male infant weighing 3020 g at 38 weeks of gestation with Apgar scores of 7 and 9 at 1 and 5 minutes, respectively. The newborn was operated on by a paediatric surgery team with an indication of intrauterine extra-hepatic bile duct perforation in the first post-partum week, and was subsequently discharged from the hospital without any complications. Isolated foetal ascites is a rare and separate situation from foetal hydrops. The perinatal outcome for isolated ascites is much better than that for hydrops foetalis.

Keywords: Intrauterine bile duct perforation, Isolated foetal ascites.

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Introduction

Foetal ascites is most often seen in association with foetal hydrops or as one of the early manifestations of hydropic decomposition. When ascites is first identified, it is important to determine whether it is isolated or whether other signs of hydrops are present, including skin oedema, scalp oedema, pleural effusions, pericardial effusion, and tricuspid regurgitation. The prognosis and therapy for a foetus with hydrops depends on the aetiology. However, when foetal ascites is seen alone (i.e., without other signs of hydrops), it may represent a separate problem requiring a different management strategy, leading to a different outcome¹.

A careful search for underlying causes should be undertaken in all cases of apparently isolated ascites. A systematic protocol for the diagnostic work up of foetal ascites should be followed, as an aetiology or associated disorder can be identified in 92% of cases^{2,3}.

Numerous mechanisms have been implicated in the generation of ascites, including abnormal lymphatic drainage; obstruction of venous return, as observed for any space-occupying lesion in the thorax; cardiac failure; decreased plasma oncotic pressure, as in foetal anaemia; hepatic insufficiency (storage disease) or congenital nephrosis; increased capillary permeability; urinary tract obstruction; or meconial peritonitis⁴.

Infections such as congenital syphilis, cytomegalovirus (CMV), varicella, toxoplasmosis, and hepatitis A can uncommonly cause foetal ascites¹.

Here, we present a case of prenatally diagnosed isolated foetal ascites secondary to perforation of the extra-hepatic bile duct.

Case Report

Mrs. Fatema, 28 Yrs old fifth gravida, married for 10 yrs, mother of 02 healthy children, Para-2VD+2MR, hailing from Narayanganj, Bangladesh was referred to Fetomaternal Medicine Dept. BSMMU at 35+³ weeks gestation with a diagnosis of isolated fetal ascites and got admitted on 11.09.14. It was her planned pregnancy, she was a regularly menstruating women with average flow and duration, her LMP was on -07.01.14 and accordingly EDD will be on 14.10.14 which was also dated by early USG.

She was on regular ante-natal checkup. Her pregnancy was uneventful up to 32 wks. During her ante-natal checkup all routine investigations were normal along with two USG scan (In local center) at about 13th and 24th wks of gestation which also reveals no abnormality. At her 32 wks of gestation she rescan her pregnancy by USG as per advice of her obstetrician which revealed gross fetal ascites. She is normotensive, nondiabetic, nonsmoker, denied any H/O fever, skin rash, or any teratogenic drug consumption, no H/O consanguineous marriage, has no H/O extra marital sexual exposure.

She has no family H/O of DM or delivery of congenitally malformed baby. With due consent and maintaining adequate privacy we examined her on 11.09.14 & found. Patient was anxious, Mildly anaemic, non icteric, no edema, Pulse- 84 bpm, BP - 120/75 mm of hg. Her other general and cardio-respiratory clinical parameters were normal. Per abdominal examination reveals -Abdomen is uniformly enlarged with presence of stria gravidarum and linea nigra, SFH : 36 cm, Lie - Longitudinal, Presentation - Cephalic, Liquor volume- Seems to be adequate, FHR : 146 bpm.

Anomaly scan after admission showed -Severe isolated fetal ascites but no peritoneal calcification or any echogenic debris with in the fluid. AFI- 13 cm, Gastrointestinal or genitourinary or other structural anomalies were not found. The patient has an AB-Rh positive blood group. Tests for Rubella (IgG), CMV (IgG), HSV (1,2) (IgG) all are positive. Hepatitis B , Toxoplasmosis, Syphilis were all negative. Other routine investigations -Normal. After assessing all the factors we terminate the pregnancy by vaginal delivery at her 36⁺ wks of gestation. she delivered a male infant weighing 3.3 kg with Apgar scores of 7/10 and 9/10 at 1 and 5 minutes, respectively (In presence of a neonatologists), Then the baby was transferred to the Dept. of Neonatology for further management. The baby was managed conservatively with a course of antibiotic, F/U on day 3 of birth his abdomen size was reduced and at day 7 the baby was completely alright and there was no ascites as documented by negative USG report, possibly the baby is a benign variant of Prune belly syndrome. Further evaluation and investigation was needed to conclude the diagnosis.

Discussion

Isolated ascites is diagnosed by demonstrating fluid surrounding the liver, spleen, bowel, extra-hepatic portion of the umbilical vein, falciform ligament, or greater omentum. When discovered on an initial sonogram, ascites should be followed by an ultrasound approximately 1 week later to determine whether progression to foetal hydrops has occurred. If the ascites remains isolated to the foetal abdomen, then progression to hydrops is much less likely¹.

Isolated ascites is most often secondary to an intra-abdominal disorder, rather than a generalized condition. It is most often secondary to obstructed uropathy; however, 20% of cases are due to gastrointestinal disorders^{4,8}. Of these, meconium peritonitis is the most common cause, which results from a bowel obstruction⁵.

The work-up for any case of ascites should include a detailed ultrasound examination to exclude the presence of any associated foetal abnormalities. The mother should be screened for the presence of viral infections such as parvovirus, CMV, hepatitis, varicella, herpes simplex, rubella, syphilis, and toxoplasmosis^{1,2}. Additionally, the blood rhesus factor and blood antibody titres of the mother should be identified.

An amniocentesis for foetal karyotyping should be considered, as the incidence of chromosomal abnormalities could be up to 15%⁹. Other than a cytogenetic analysis, evaluating for a possible foetal infection (TORCH titres, antigen-specific IgM/IgG) and a prenatal diagnosis of inherited metabolic diseases are helpful^{1,2}. These data could also be obtained from foetal blood sampling.

A foetal paracentesis can be performed to evaluate the meconium, protein/lymphocyte counts, TORCH titres, and the foetal karyotype¹. Massive compression of the chest caused by intra-abdominal ascites before 24 weeks of gestation may lead to pulmonary hypoplasia, but it is uncertain whether foetal paracentesis is helpful in this situation^{1,10}. A foetal echocardiogram is also warranted to rule out a cardiac anomaly or arrhythmia¹.

Bishry reported a series of twelve cases with isolated foetal ascites without any other anomalies detected antenatally, and ten survived postnatally. Only one of the ten cases had ileal atresia detected postpartum, which was repaired. The other nine cases had no abnormalities that could be detected either antenatally or postnatally. The two cases of foetal loss were diagnosed before 20 weeks of gestation and one had laryngeal atresia, which was terminal².

A larger series reported by Favre et al. detected approximately the same survival rate (8/8) for idiopathic isolated foetal ascites, in which no cause could be demonstrated during the foetal and neonatal periods⁴. They documented a significant relationship between survival rate and gestational age at diagnosis.

Furthermore, Bishry could detect the cause of isolated foetal ascites in 26 of 28 cases antenatally², whereas Favre et al. could detect the cause in only 8 of 25 cases⁴.

In our case, we could not identify any cause using data from the work-up we performed antenatally.

In conclusion, Isolated foetal ascites is a rare and separate condition from foetal hydrops. The perinatal outcome for isolated ascites is much better than that for hydrops

foetalis. An extensive work-up should be conducted to demonstrate the cause, since most cases are associated with other abnormalities.

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