Spontaneous resolution of fetal ascites secondary to gastrointestinal abnormality

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Introduction

- Reported cases of isolated fetal ascites determined to be idiopathic have been shown to carry a favorable prognosis with frequent spontaneous resolution in utero (1,2,3).
- These cases generally reported better fetal outcomes with delivery of normal neonates as compared to cases with associated conditions such as gastrointestinal and genitourinary abnormalities, intrauterine infections, and overlapping cases with hydrops (1).
- No existing reports of antenatally resolving fetal ascites with a discovered gastrointestinal anomaly describe concurrent resolution of the underlying abnormality without surgical correction or postpartum regression with medical management.
- In this case, fetal ascites was prenatally diagnosed on ultrasound at 32 weeks secondary to a suspected gastrointestinal abnormality and was found to have spontaneously resolved in utero with a normal neonatal course.

Presentation of the Case

A 33-year-old G3P1011 female presented for routine visit at 32 weeks and was found to have a diagnosis of moderate fetal ascites by ultrasound examination with a complex mass noted in the fetal abdomen near the small bowel measuring 5.2 x 3.6 cm. See Figures 1a and 1b. There were no pleural effusions, pericardial effusion or skin edema noted. Both umbilical artery and middle cerebral artery Doppler studies were also noted to be normal. The fetus was noted to be large for gestational age with an estimated fetal weight of 2600 grams (5lbs12oz, >90% for gestational age) however this was largely driven by the fetal abdominal circumference which was measuring 5 weeks ahead at 33.24cm due to the ascites. Her prenatal course had been uncomplicated previously with low risk prenatal screening and an unremarkable Level II anatomy ultrasound at 20 weeks. Her only medical history included a liver mass diagnosed in 2012 by a hepatologist. Her prenatal course otherwise became complicated by gestational diabetes but was controlled on insulin.

Due to the concern for possible fetal gastrointestinal (GI) abnormality and potential developing hydrops, she received a full course of betamethasone and lab studies were sent. TORCH titers and Parvovirus titers were negative based on prenatal records. The patient's blood type was A positive. Fetal cardiac anatomy was noted to be normal. The patient was counseled on possible genetic etiology however she had low risk first and second trimester screening and amniocentesis was deferred due to her advanced gestational age. For further evaluation of the previously noted complex intrabdominal mass, a fetal MRI was performed which revealed traces of fetal ascites and mild subcutaneous edema. A space-occupying lesion of a loculated area of ascites was noted under the area of the gallbladder on the left side with concern for ruptured gallbladder versus ruptured bowel.

On follow up ultrasound, the complex mass appeared as an area of echogenic bowel and was noted to be 5.4 x 2.7 cm at 33 weeks and then 2.2 x 1.97 cm at 34 weeks and only trace ascites was now seen. The liver appeared enlarged and the gallbladder was difficult to visualize.

Clinical Course

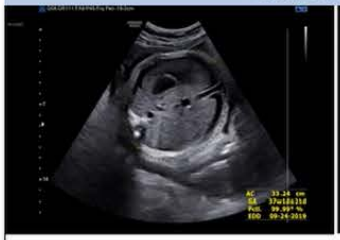

Figure 1a. Ultrasound image of the fetal abdominal circumference at 32 weeks with moderate ascites noted.

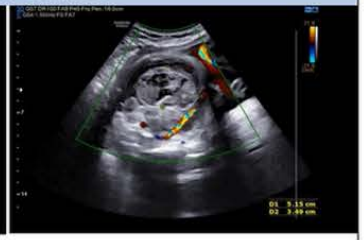

Figure 1b. Ultrasound image of the fetal abdomen illustrating noted gastrointestinal mass.

- At 35 weeks, the ascites appeared to have resolved. The complex abdominal mass near the small bowel continued to measure smaller. (Figure 2)
- At 37 weeks, both the fetal abdominal mass and ascites had resolved. (Figure 3)
- During weekly visits no fetal hydrops was noted, doppler studies remained normal, and antenatal fetal testing was reassuring.
- The patient presented to labor and delivery at 39 weeks for scheduled repeat cesarean section and subsequently delivered a viable female infant weighing 3515 grams with APGAR scores of 9 and 9 at 1 and 5 minutes. Neonatal abdominal ultrasound was unremarkable. The neonate had no issues with feeding and normal urinary and bowel patterns noted and both the patient and neonate were discharged home on hospital day 3.

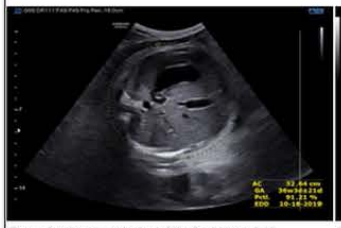

Figure 2. Ultrasound image of the fetal abdominal circumference at 35 weeks demonstrating no remarkable fetal ascites.

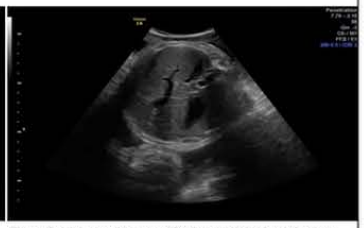

Figure 3. Ultrasound image of fetal abdominal circumference at 37 weeks demonstrating no remarkable fetal ascites.

Discussion

One of the most commonly reported gastrointestinal abnormalities causing fetal ascites is meconium peritonitis (MP) which develops secondary to bowel obstruction and perforation in utero (5). Occurring in 3.7 out of 10,000 live births (5), fetal ascites is the most commonly occurring sonographic finding of MP, in some reports as high as 93.3% of cases (6), making it a likely explanation behind the fetal ascites in our case. Intra-abdominal calcifications, a frequent find in MP, as well as dilated bowel loops have been shown to persist in reported cases in which fetal ascites spontaneously resolve (1). Our case was shown to have resolution of both the intra-abdominal mass and ascites by 37 weeks. In 91.9% of cases in a retrospective study of neonates with a prenatal diagnosis of MP (n=37), surgical correction was required (5). In one report of thirty-four neonates, the most frequent anomaly found was volvulus of the GI tract (5).

Severity, one of the prognostic factors of isolated fetal ascites, has been determined to be negatively correlated to gestational age of onset, the most important factor in predicting outcomes in isolated fetal ascites (10). In a retrospective review by Nose et al, 86% of patients with ascites detected after 30 weeks had regression without surgical intervention while 80% of those detected before 30 weeks required eventual surgery. In our case, the ascites and associated abnormality was detected at 32 weeks and was subjectively determined to be moderate in severity.

Conclusion

Since spontaneous resolution is uncommon, antenatal detection of fetal ascites and GI abnormalities requires further monitoring for worsening or changing signs that may require intervention. The data supports that late gestational onset is associated with a more mild condition of isolated fetal ascites and carries a more favorable prognosis, while onset before 24 weeks or association with fetal hydrops carries a high mortality rate. Isolated fetal ascites even with associated gastrointestinal abnormality can have good neonatal outcomes with late gestational onset and in utero spontaneous resolution.

References

1.Zezlo C, Benacerraf BR. The causes and natural history of fetal ascites. Prenatal Diagnosis. 1994;14(10):941–6.
2.Karbin S, Maharashtri N, Patil P, Patil M, Singh D. Isolated fetal ascites: A case report with review of literature. Indian Journal of Health Sciences. 2014;7(1):55.
3.Merlin-Hoobach E, Mazer J. Sonographically documented disappearance of fetal ascites. Obstetrics and Gynecology. 1983 Feb;61(2):253–257.
4.Abdellatif M, Alsenani S, Al-Balushi Z, Al-Dughaishi T, Alsawina M, Al-Riyami N. Spontaneous Resolution of Fetal and Neonatal Ascites after Birth. Sultan Qaboos University Medical Journal. 2013;13(1):175–8.
5.Chen C-W, Peng C-C, Hsu C-H, Chang J-H, Lin C-Y, Jim W-T, et al. Value of prenatal diagnosis of meconium peritonitis. Medicine. 2019;98(39).
6. Ping LM, Rajadevi VS, Safian SE, Chandran S. Meconium Peritonitis: Correlation of Antenatal Diagnosis and Postnatal Outcome - An Institutional Experience over 10 Years. Fetal Diagnosis and Therapy. 2016;42(1):57–62.
7.Bahry GE. The outcome of isolated fetal ascites. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2008;137(1):43–6.
8.Arikan I, Barut A, Harma M, Harma M, Dilgan S. Isolated Fetal Ascites: A Case Report. Journal Of Medical Cases. 2012;3(2):110–112.
9.Corteville JE, Gray DL, Langer JC. Bowel abnormalities in the fetus - Correlation of prenatal sonographic findings with outcome. American Journal of Obstetrics and Gynecology. 1996;175(3):724–9.
10.Nose S, Lee N, Soh H, Kamiyama M, Taro O, Kanagawa T, et al. The prognostic factors and the outcomes of primary isolated fetal ascites. Pediatric Surgery International. 2011May;27(5):799–804.