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Fetal Gastric Pseudomass: Case Report

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ABSTRACT

Second trimester fetal ultrasonography and, less frequently third trimester fetal scan, can reveal an intragastric well-defined, not vascularized, echogenic image, that spontaneously disappears in most cases. This image, called Fetal Gastric Pseudomass, seems to be the result of a still inadequate gastric peristalsis and / or an aggregation of epidermal, urothelial, amniotic cells, blood and fluff swallowed by the fetus. A careful fetal abdominal ultrasonography, can show the difference between the Fetal Gastric Pseudomass and pathological neoformations of the stomach and adjacent organs. Moreover, the exam can recognize any pathological pictures of the placenta too, eventually related to the FGP formation. This report shows an echographic image referred to a Fetal Gastric Pseudomass, suspected to be due to a previous endo-amniotic bleeding occurred between the 31st week and the 34th week, not clinically detected during pregnancy.

Keywords

Fetal Gastric Pseudomass, Fetal sonography.

Abbreviations

ALT: Alanine Aminotransferase; AST: Aspartate Aminotransferase; cffDNA: Cell Free Fetal DNA; FGP: Fetal Gastric Pseudomass; HBsAg: Hepatitis B surface antigen; HCV: Hepatitis C Virus; HIV: Human Immunodeficiency Virus; LDH: Lactic Dehydrogenase; NIPD: Non-Invasive Prenatal Diagnosis; CS: Caesarean Section; VDRL: Venereal Disease Research Laboratory.

Introduction

Ultrasound exam of fetus in the third trimester, can occasionally show an echogenic area within fetal stomach, called Fetal Gastric Pseudomass (FGP). FGP appears echogenic, well-defined and not vascularized. It usually develops towards a spontaneous resolution. Rarely it can be an indirect sign of pathological events. FGP is more frequent in the second trimester of pregnancy, when gastric peristalsis is still not well organized, but its diagnosis in the third trimester should not alarm the patient. The case presented was the result of occasional findings during an ultrasound scan performed due to bile acids rise, in a global picture of cholestasis during the third trimester of pregnancy.

Case Presentation

Patient 41 years old, G1001, BMI 21.9 at the beginning of pregnancy, BMI 26.8 at the end. Negative pathological history, infectious disease screening: (immunity to toxoplasmosis, rubella virus and previous cytomegalovirus infection), (tested negative for HCV, HbsAg, VDRL, HIV), positive vaginal swab for streptococcus agalactiae. Non-invasive prenatal diagnosis (NIPD) with free fetal DNA analysis (cffDNA) performed at 11 weeks and 5 days did not detect aneuploidies or structural chromosomal changes, presence of the RHD gene.

The ultrasound study of the fetus at the 13th, 22nd and 31st weeks

revealed no pathologies. The patient underwent anti-D immune-prophylaxis at 30th week. Up to the 34th week the pregnancy has been physiological.

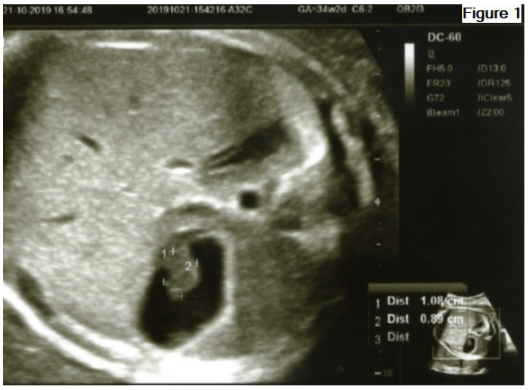
At 34 weeks and 2 days the patient manifested a widespread itching throughout the body. Blood tests showed an increase in bile acids whilst the ultrasound scan of the abdomen showed no abnormalities. Blood pressure values were normal (Table 1).

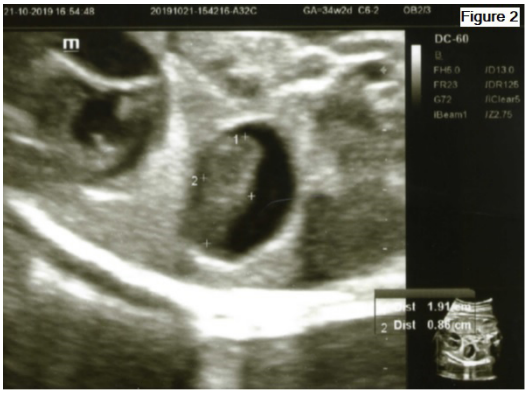
Weeks + days	34+2	36+2	37	37+2	37+3	3° day post CS
Bile acids u moli/L	8.0	19.3	12.8	12.1	21.6	6.2
AST- U/L	19	16	16	15	24	32
ALT U/L	20	16	16	13	15	29
LDH U/L			137	129	287	180

Table 1: Blood tests.

A fetal ultrasonography was performed at 34 weeks and 2 days using a 2-5 Mhz convex probe. Fetal biometry was found at the 40th percentile and maternal-fetal eco-flowmetry appeared within normal range. The amniotic fluid was transonic and its volume was adequate, the placenta was normo-inserted and no signs of subchorionic hemorrhage were identified.

The fetal morphology revealed an oval, echogenic, homogeneous shadow within the gastric bubble, measuring 10 x 8 x 19 mm of diameter. The mass had linear contours, no vascularization and was apparently fixed to the gastric wall. No movement were detected according to different maternal and fetal positions. The formation was surrounded by transonic liquid. Gastric walls appeared smooth without thickening. There were no other neoformations in the upper abdomen, and no liquid spillage into the peritoneum (Figures 1-2).





An ultrasound control performed seven days later showed no more gastric mass. The stomach presented a normal anatomy and its echostructure and size were regular.

The patient was hospitalized at 35 weeks for pregnancy cholestasis. She was treated with 300 mg ursodeoxycholic acid twice a day.

At 37 weeks and 1 day she underwent the procedure of labor induction with prostaglandins.

At 37 weeks and 3 days, an emergency cesarean section was performed because of a placental abruption. During the surgery endo-amniotic bleeding was reported.

The total blood losses during surgery were 300 ml. The placenta weighted 400 gr, and the funiculus had racket insertion. The newborn was an alive and vital female weighted 2470 gr (Table 2).

weight	2470 gr		
length	46 cm		
Cephalic circumference	32 cm		
APGAR	at the 1st minute: 10	at the 5th minute: 10	
umbilical artery	pH 7.38	pCO2: 41.9	BE-ecf : 0.1
umbilical vein	pH 7.39	pCO2: 41.9	BE-ecf : -0.1

Table 2: Neonatal parameters.

The infant was breastfed

The patient developed fever during puerperium and was treated with oral administration of amoxicillin / clavulanic acid therapy (875mg / 125 mg every 12 hours) for 6 days. She was discharge on the sixth day in good health condition.

The abdominal ultrasound scan of the neonate did not reveal pathologic formations.

Discussion

The stomach during embryo's development reaches its position at 7 weeks of gestation. It begins to show its peristalsis starting by 20 weeks, when the neuromuscular development is almost complete [1,2].

The second trimester morphological ultrasonography, performed between the 20th and the 22nd week, may reveal an echogenic, homogeneous, oval, non-vascularized shadow. It appears to be linked to the gastric wall. This neoformation expanding in the stomach is called: Fetal Gastric Pseudomass (FGP). The FGP frequency is 1: 300 [3]. It is relatively frequent in the second trimester of gestation because of the poor peristaltic activity of the stomach [4]. Less frequently the pseudomass can be found in the third trimester of pregnancy, while just rarely it is present in the first days of life. FGP is usually reabsorbed without causing any consequence to the fetus or the newborn [5].

FGP are thought to be due to skin cells, urothelium, amnios, cellular fragments, fluff, caseous paint, blood, which swallowed by the fetus, form a partially solid formation inside the stomach [6].

It has also been assumed that these FGPs may occur during meconio peritonitis [6], after invasive investigations such as amniocentesis or villocentesis and even after subchorionic haemorrhage or mild episodes of placental abruption with blood extravasation in the amniotic fluid [7,8].

In the differential diagnosis, a careful study of the fetal abdomen is important to distinguish undiagnosed pathologies from FGP [9]. Infact expansive pathologies affecting stomach, kidneys, adrenals, pancreas or retroperitoneum, such as gastric teratomas, neuroblastomas, nephroblastomas, pancreatic blastoma should be excluded [10,11].

The finding of FGP, when no other fetal pathologies are found, should also direct us to a careful evaluation of the placenta to exclude any causes of endo-amniotic bleeding. In this report, pregnancy has been complicated during labor by an abruptio placentae with endo-amniotic bleeding. It could be hypothesized, in this case, that the formation of the FGP has been due to a subchorionic haemorrhage, poorly symptomatic, causing the endo-amniotic bleeding, not highlighted through instrumental tests, happened between the 31st week (fetal echo in the norm) and the 34th week (FGP finding).

FGP is always reabsorbed without leaving anatomical and dysfunctional results [9], and the evolution can last from few hours (12) to few weeks (5). Only in a limited number of cases it can be the indicator of serious disease that determines its formation [7,8].

Conclusion

The diagnosis of the FGP isolated, not associated with other evidences of pathology must be considered as a completely benign finding. In any case, an adequate counselling in order to avoid any worries of the patient is mandatory. However, it is necessary to perform a careful ultrasound examination, in order to exclude the presence of undiagnosed pathologies or conditions that may be the cause of FGP. In the present case, the clinical evolution of pregnancy suggests that an endo-amniotic hemorrhage could have been the cause of Fetal Gastric Pseudomass.

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