

ULTRASONOGRAPHY IN THE DIAGNOSIS OF FETAL INTESTINAL OBSTRUCTION - A CASE REPORT

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ABSTRACT

Bowel obstruction is the main cause of neonatal surgical emergencies and atresia is the most prevalent representant of it. Colonic atresia on the other hand, is very rare among the others intestinal atresias and its ultrasonographic diagnosis is not frequent, specially due to its unspecific and sometimes non-pathogenic findings. This paper aims to describe a case of colonic atresia diagnosed with ultrasonography during prenatal care.

KEYWORDS: COLONIC ATRESIA; ULTRASSONOGRAPHY; PRENATAL

INTRODUCTION

Intestinal obstruction is the most common cause of neonatal emergencies, occurring in 1 in every 1,500 live births. A few decades ago, however, children who were born with such condition almost always died. Advances in surgical techniques have since contributed enormously to reduce mortality. In addition, an important role in reducing this number is due to the development of diagnostic methods in prenatal care, such as ultrasonography (USG) ¹.

Among the various causes for obstruction, intestinal atresia, meconium ileus, Hirschprung's disease and intestinal malrotation, with or without volvulus, stand out, the most common being atresia, followed by malrotation and then meconium ileus¹.

Atresia has a prevalence of 1 case for every 2,500 live births and can be duodenal, jejunal, ileal, jejunoileal or colonic, with the duodenal being the most commonly found. In prenatal ultrasounds, the presence of polyhydramnios can be observed, which becomes greater the more proximal the obstruction is, in addition to the dilation of intestinal loops ².

In duodenal atresia, the diagnosis should be suspected when there is a finding of polyhydramnios in almost all cases in conjunction with a 'double bubble'. In this condition, the association with defects in other systems is common, as well as with trisomy of chromosome 21. Ileal jejunal atresia is not as associated with other malformations as duodenal and its multiplicity is common. In the ultrasonography it is characterized by the dilation of thin loops in the aspect of a triple or quadruple bubble. Finally, colonic atresia, the rarest of them,

generally does not occur in multiplicity and its evidence in prenatal care is due to dilation of loops. Many cases, however, cannot be detected in the ultrasound³.

Meconium ileus is the result of intestinal occlusion of a thicker meconium, suggested by hyperechogenicity, with or without dilation. It is present in at least 15% of patients with cystic fibrosis⁴.

Hirschprung's disease, on the other hand, is caused by a defective migration of ganglion cells, approximately in the 12th week of pregnancy, which culminates in an intestinal aganglionosis, recognized by loop dilation. Polyhydramnios, in this case, is not commonly visualized ⁴.

Finally, poor intestinal rotation is the result of incorrect embryonic fixation, which causes rotation of mesenteric vessels and can culminate in ischemia. Ultrasonographic visualization is possible when intestinal volvulus occurs, resulting in dilation of the loops ⁴.

A CASE REPORT

AFCA, female, G4P3A1, 30 years old. The patient underwent morphological ultrasound over 33 weeks of pregnancy. Upon examination, dilation of large intestinal loops was observed indicating suspicion of obstruction due to atresia (figures 1-3). The patient went into labor three weeks later, after completing 36 weeks and 5 days of pregnancy. Soon after birth, the newborn was submitted to the first approach for surgical correction. After 20 days, the second corrective surgery was performed. Neonate remained in the intensive care unit (ICU) for 56 days and is currently healthy.

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Figure 1: Obstetric ultrasound: distention of the large intestine (anechoic content).



Figure 2: Obstetric ultrasound: distention of the large intestine (anechoic content)

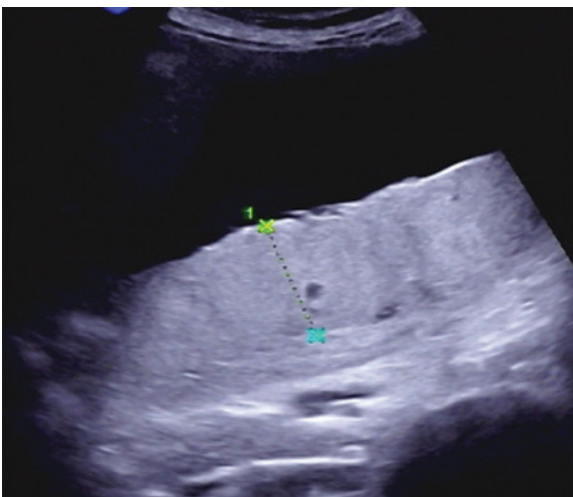


Figure 3: Obstetric ultrasound: polyhydramnios.

DISCUSSION

Colonic atresia arises in neonatal life with vomiting, loop distension and difficulty in eliminating meconium. It is a rare condition that constitutes only 1.8 to 15% of intestinal atresias and can be confused with other conditions such as Hirschsprung's disease, meconium plug syndrome and meconium ileus³.

Prenatal diagnosis in general intestinal obstructions by USG usually occurs in the 3rd trimester of pregnancy; however, the accuracy is variable. This method can become limiting because it depends on the operator and his technique and because it has a restricted field of vision. In addition, many findings are not very specific and others are non-pathological variants⁵.

As mentioned, for example, polyhydramnios and even dilation of loops may be present in other conditions of obstruction. However, the location of the dilation and even the absence of typical signs of other atresias, such as the double, triple or quadruple bubble sign, speak in favor of a diagnosis of colonic atresia.

Although ultrasonography is not always able to provide the correct diagnosis and exclude differentials, through early diagnosis, the child's parents can be offered advice regarding the condition, especially in cases where the obstruction is part of some other diagnosis, as is the case of meconium ileus in cystic fibrosis⁶.

In addition, when an intestinal obstruction is diagnosed early, it is possible to develop a therapeutic plan for the child, involving a multidisciplinary team and assistance center capable of attending complications during child birth or after the child is born. Early planning intervention is able to reduce mortality and complications in the neonatal period⁶.

A retrospective study was conducted at the Texas Children's Fetal Center in Houston, in Texas, from January 2006 to February 2016, to show the result of prenatal diagnosis of fetal gastrointestinal obstruction. The survival rates found were 88%, and in cases of obstruction of the large intestine, it was 100%⁵. Such information differs greatly from the extremely high mortality of decades ago. Data suggest that until 1950, only 125 children had survived congenital bowel obstructions¹.

It is known in medicine that early diagnosis in several areas is responsible for improving the patient's prognosis and even reducing costs for the Health System. Therefore, advances in the ultrasonographic method, as well as the adequate training of health professionals and studies in the field are aspects of great value in obstetrics and fetal medicine.

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