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Antenatal imaging, correlation and postnatal outcome of fetuses with digestive dilatation at the jejuno-ileal level: about 2 cases

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Abstract: Jejunoileal obstructive digestive pathology is relatively little studied antenatally by relation to atresia of the esophagus and duodenum due to its rarity. Indeed, it constitutes a small part with an incidence of 1 in 5000 cases. She may be suspected and diagnosed graphically at the end of the second and third trimester. There comparison between antenatal ultrasound data and intraoperative explorations constitute the key to success here. Its management is surgical and is generally poor prognosis if there are staged stenoses. The main objective of our study is to assess the relevance diagnoses based on ileojejunal digestive dilatations seen in the antenatal period, in correlating these data with postnatal diagnoses. The secondary objectives are to observe neonatal morbidity and mortality of these children.

Keywords: Jejunal and ileal digestive dilatation, abdominal fetal MRI, surgery, prognosis.

INTRODUCTION

Partial or complete congenital closure of the intestinal lumen, intestinal atresia, is among the most common congenital malformations rarer from the digestive tract (3/10,000 live births) . According to the series studies, jejuno-ileal localization would occupy first place .

There are four types of intestinal atresia: diaphragmatic, much more common, cordal, segmental or true atresia and multiple or in strings . (1,2)

Jejuno-ileal atresia can exist alone or be associated with other malformations .

The cause the most incriminated is a vascular accident antenatal .(3,4,5)

The prognosis depends on the precocity of the diagnosis and treatment, its quality, type of atresia and associated conditions .

Mortality varies by less than 10% in developed countries more than 50% in less fortunate nations .(6)

The clinical picture is that of an occlusion acute neonatal intestinal tract. The diagnosis antenatal is established by antenatal ultrasound.

Treatment includes resuscitation with total parenteral nutrition (TPN), the intestinal anastomosis segment resection atretic.

1- First CLINICAL CASE

Patient aged 40, without pathological history, Gestivity 4 Parity 3 (3 children delivered vaginally including one newborn who died at Day 15 of life in a context of occlusion in our training), her pregnancy was poorly monitored at the Center of unremarkable health having never benefited from an ultrasound during her pregnancy, admitted to us for her first consultation at 35 weeks (according to a precise last date).

In whom the general examination was without particularities,

Obstetric examination was unremarkable

a- **On the ultrasound**

Ultrasound done at 35 weeks: finds a progressive single-fetal pregnancy, in cephalic presentation, biometry corresponding to gestational age

Morphology: was unremarkable apart from the abdominal level where we identified a dilated stomach with dilated duodenum and a few intestinal loops with intestinal peristalsis suggesting a high obstruction with an intestinal lumen at 20 mm

Intestinal wall 2 mm

Furthermore, no ultrasound signs of peritonitis (no calcifications)

The rest of the morphology was normal

Non-low anterior placenta inserted

Amniotic fluid in normal amounts.

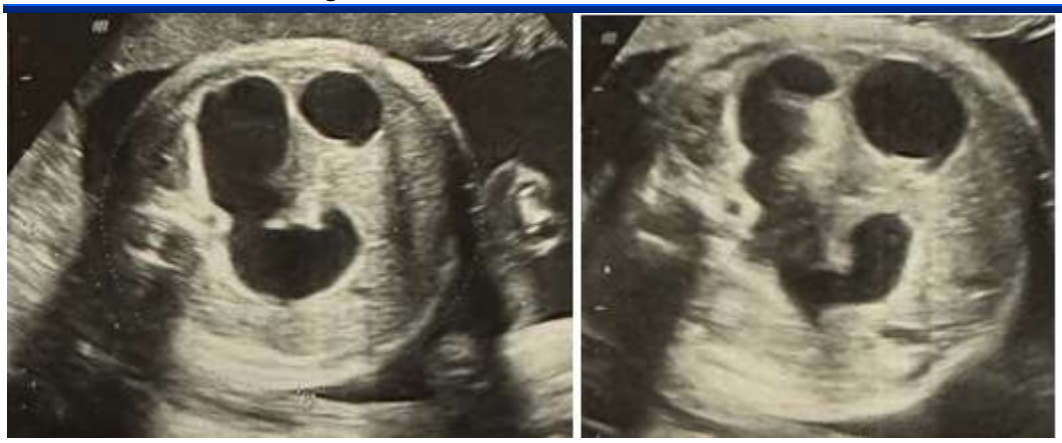

Figure 1 : A dilated stomach with dilated duodenum and some intestinal loops with intestinal peristalsis suggesting a high obstruction with an intestinal lumen at 20 mm, Intestinal wall 2 mm

b- Newborn examination

The patient gave birth vaginally at 39 weeks +5 days
Newborn examination found female newborn

Admission exam

General examination: weight 2.1 kg, HR 130 bpm, FR 40 cycl/min,
Abdominal examination: soft and flat abdomen; no meconium emission, no hepatosplenomegaly
Pulmonary examination: no respiratory distress, correct saturation with ambient air
The remainder of the somatic examination is unremarkable.

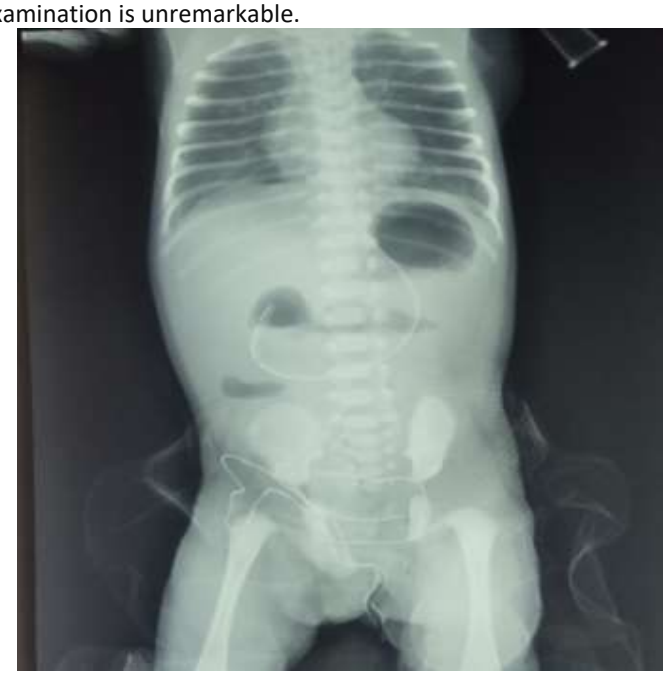

Figure2: Unprepared abdomen of the newborn with occlusion

c- Intraoperative exploration and operative procedure:

the 1st small bowel loop dilated upstream of a spiral small intestine atresia
· The exploration of the last small cove found 2 diaphragms sitting on the 2
last handles, which were resected taking away the diaphragms, good passage at the level of the colon
· End-to-end anastomosis between the 1st small loop and the distal loop by overjet at vicryl 4/0, reinforced with separate stitches
· Carrying out the permeability test: good pass

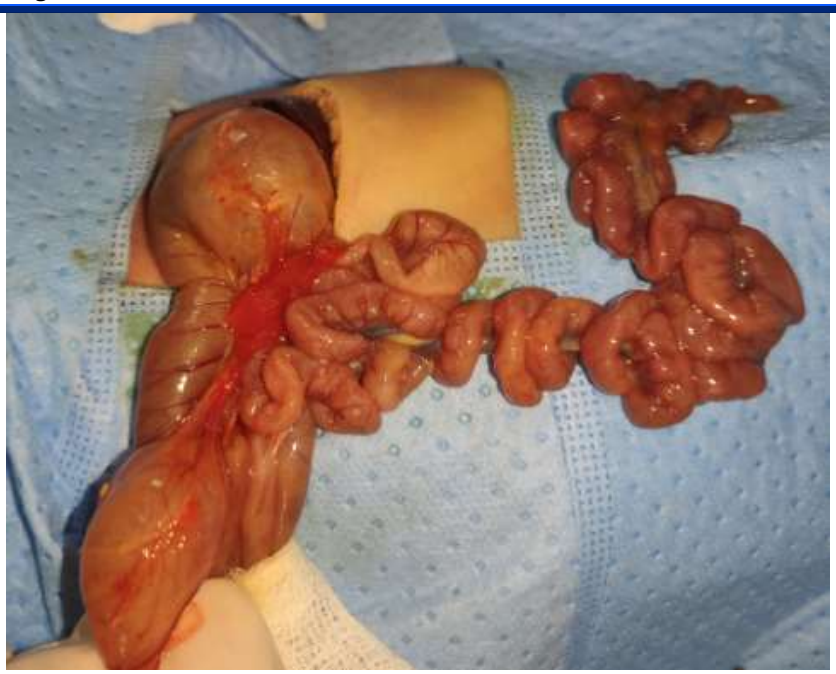

Figure 3 : intraoperative exploration showing atresia of the first ileal loop

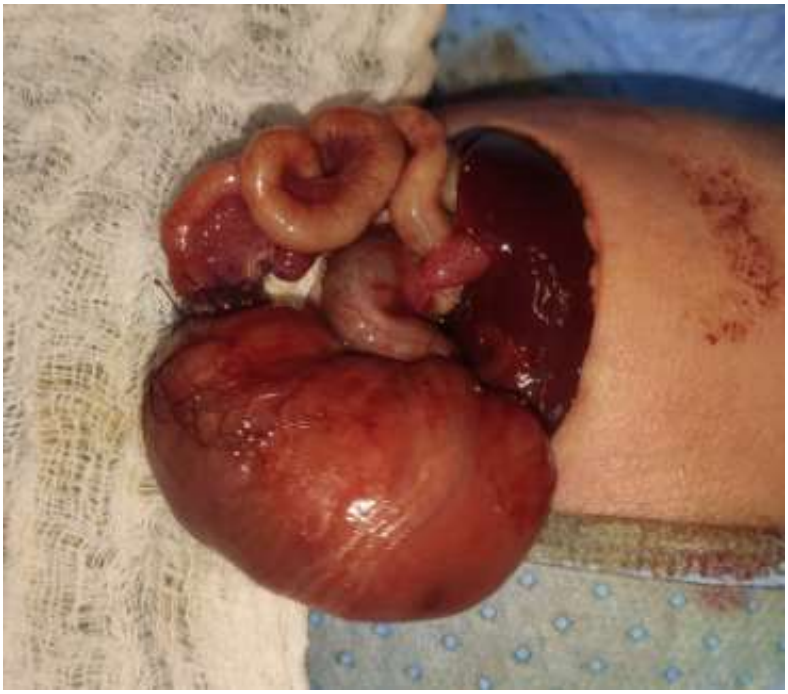

Figure 4 : End-to-end anastomosis between the 1st small bowel loop and the distal loop by overjet

The baby benefited from parenteral nutrition for 15 days, then switched to enteral nutrition,
There was no sepsis
Baby declared discharged 30 days after surgery
Alive, currently 1.5 years old and with good psychomotor development

2- Second clinical case

Patient aged 36, without pathological history, G3 P2 (2 children delivered vaginally without particularities of good psychomotor development), her pregnancy was well monitored with discovery on ultrasound in the 2nd trimester of digestive dilatation.

In whom the general examination was without particularities, followed by prenatal consultation without particularities, Obstetric examination was unremarkable

a- **On the ultrasound**

Ultrasound done at 32 weeks: finds a progressive single-fetal pregnancy, in cephalic presentation, biometry corresponding to gestational age
Morphology: found a digestive dilatation probably of grelic origin reaching 30 mm with wall thickened to 4 mm, no calcifications seen (figure 61)
The rest of the RAS morphology
Non-low anterior placenta inserted
Amniotic fluid in normal amounts

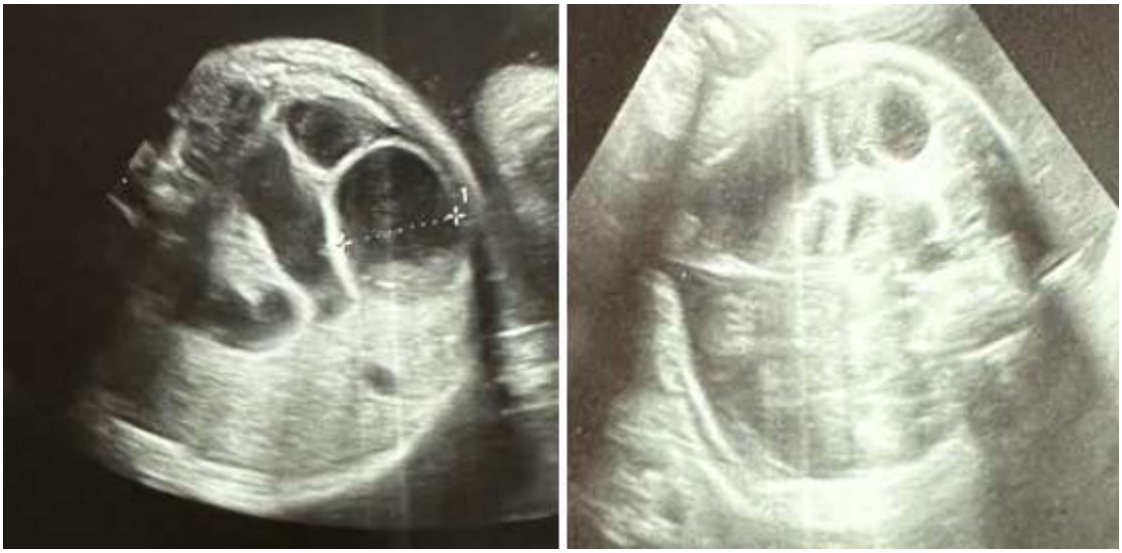

Figure 5 : digestive dilatation probably of grelic origin reaching 30 mm with wall thickened to 4 mm, no calcifications seen.

b- Newborn examination :

The patient gave birth vaginally at 39 weeks, newborn male

Physical examination :

- Abdominal examination:

Flat and soft stomach
Naso-gastric tube: brings back bile 20cc
Anus in place

- OtoRhino Laryngeal examination: good passage of the NasoGastric tube, no choanal atresia, no esophagus

No cleft lip or patina

- Examination of external genitalia:

Penis without abnormality testicle in place

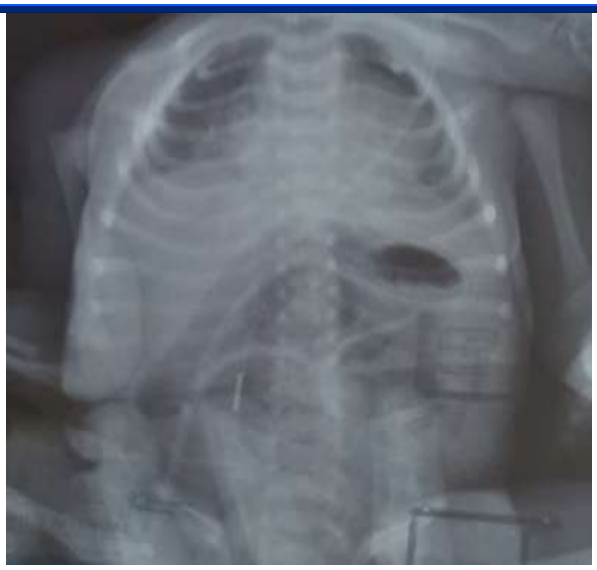

Figure 6 : Abdomen Without Preparation in newborns with obstruction

c- I**ntraoperative exploration**

- Exploration finds a zone of disparity in caliber between the 3rd and 4th jejunal loops, with the presence of tiered atresias in the number of 4 located respectively beyond the 3rd, 8th, 10th jejunal loops
- Creation of end-to-end anastomosis with remodeling of dilated loops
- Leak test
- Exploration of the rest of the abdominal area was unremarkable

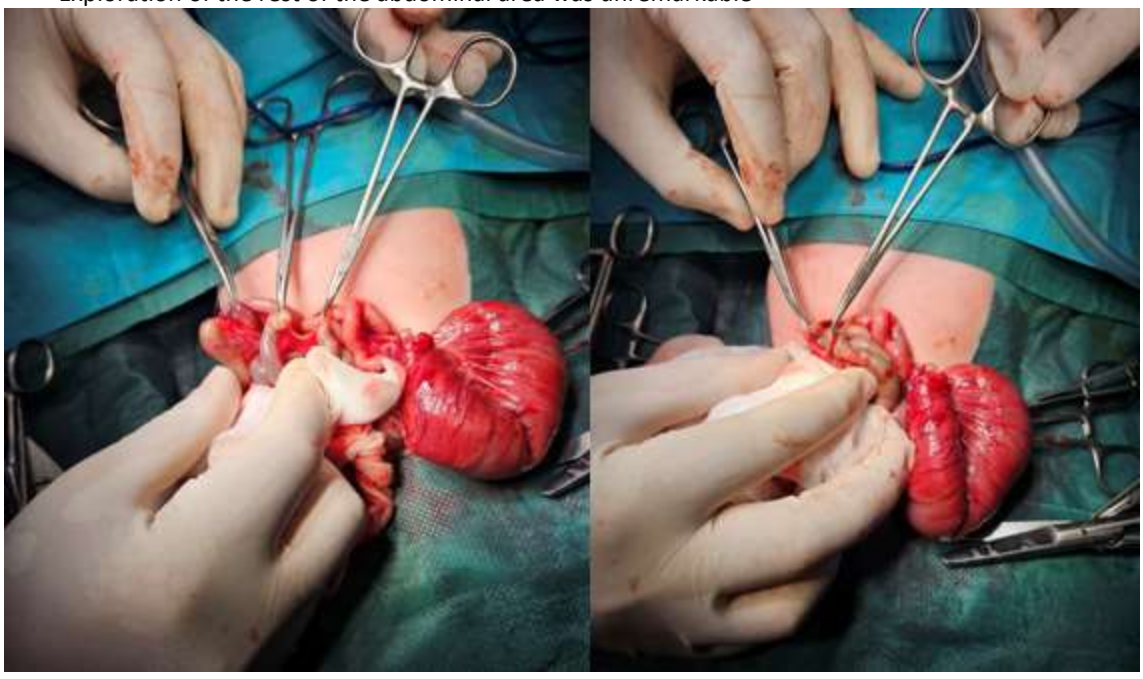

Figure 7 : staged atresias

- The baby benefited from parenteral nutrition for 2 days, the baby had severe sepsis
  Died on Day 3 postoperatively

3- Conclusion:

The diagnosis of ileal atresia is made postnatally but antenatal discovery is possible thanks to obstetric ultrasound performed in the 2nd and 3rd trimester. The benefit of antenatal diagnosis of this pathology lies in the speed of surgical treatment in the immediate postnatal period since it is an extreme emergency.

A challenge remains in prenatal imaging: how to assess the length of intact intestine available to the pediatric surgeon? To address this challenge, optimizing fetal MRI performance and interpretation must be a priority for fetal and infant imagers . The aim is to contribute effectively to the discussions specific to multidisciplinary meetings on the personalized care of these very specific fetuses, both in utero and ex utero.
Unfortunately, due to lack of resources, not all of our patients were able to have a prenatal MRI.

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