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Neonatal Microcolon Occlusion: About A Case and Review of the Literature

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Abstract **Case Report**

Microcolon is a rare radiological feature encountered during neonatal lower gastro intestinal obstruction. It results from a defect in the passage of digestive contents from the small intestines to the colon during fetal life. The etiologies involved are meconium ileus, ileojejunal atresia, and total colonic agonglion. The unprepared abdomen (UAP) and colonic opacification help to orient the diagnosis and the therapeutic attitude. We report the case of a neonate with a micro-colon occlusion by reviewing the data in the literature.

Keywords: Microcolon, occlusive syndrom, opacification.

INTRODUCTION

Microcolon is a rare radiological feature defined by a reduction in colonic caliber. Digestive obstruction during this condition may be due to meconium ileus, total colonic a ganglion, or the presence of obstruction on ileal or jejunal atresia.

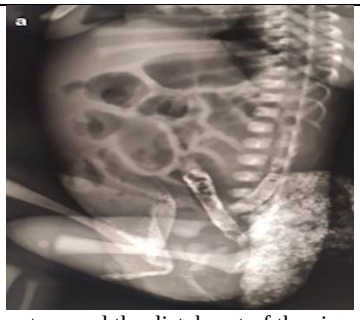
We report the case of a full-term female neonate, without any obstetrical or maternal pathological history, who presented with an occlusive syndrome made to vomiting and absence of meconium emission from the second day of life.

CASE REPORT

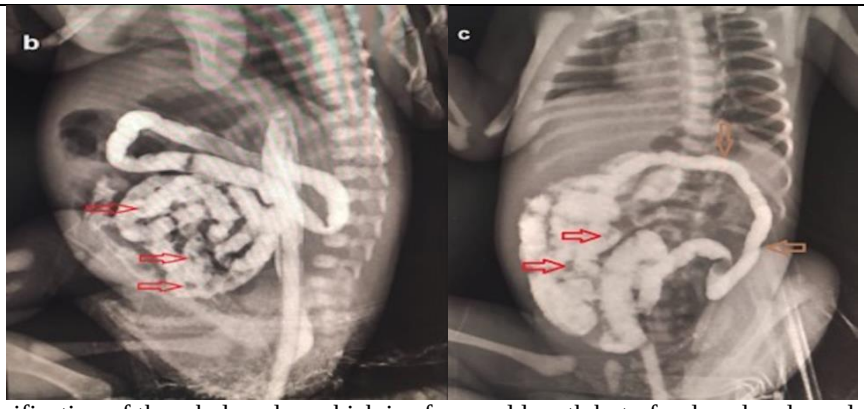
We report the case of a full-term female neonate, without any obstetrical or maternal pathological history, who presented with an occlusive syndrome made to vomiting and absence of meconium emission from the second day of life. On examination, the anal margin was healthy and the abdomen was distended. The rectal probe test triggered a meconium debacle. The newborn was referred for colonic barium opacification.

The unprepared abdomen showed aerial distension of the small intestines. After administration of barium by the rectal probe, opacification of the rectum and the entire colon showed a constant reduction of their caliber, involving all segments, without visualization of disparity of caliber, with a recto-sigmoid caliber less than 1.

The last ileal coves were opacified with the presence of multiple images of subtractions (arrows). The evolution was marked by the collapse of the abdomen and the resumption of normal transit and the diagnosis retained was a micro colon on meconium ileus.



a: beginning of opacification of the rectum and the distal part of the sigmoid. Note the aerial distension of the small intestines



b, c: opacification of the whole colon which is of normal length but of reduced and regular caliber ⇨, progression of the barium at the level of the small intestines which are the site of subtraction images in relation to meconium ⇨ No disparity in caliber is noted.

Figure: Colonic barium opacification: side view (a) and (b) and front view (c)

DISCUSSION

Neonatal intestinal obstruction manifests as abdominal distension associated with vomiting and delayed or absent meconium emission [4]. In the case of upper gastrointestinal obstruction, standard radiography is sufficient to show gastric or duodenal aeriform distension (double or triple bubble epigastric appearance). The lower gastrointestinal obstruction is manifested on the standard radiograph by a dilatation of the small intestines, with little or no air in the colon and rectal area [5]. In the latter case, further investigation by opacification is necessary.

Microcolon is a radiological aspect of a lower digestive obstruction and is defined as a colon that is reduced in size and not distensible (less than the height of a lumbar vertebral body [4] or less than the inter-peduncular distance of the lumbar vertebrae [5]). It is the result of a defect in the passage of the contents of the small intestines to the colon during fetal life [6]. This radiological aspect points to three etiologies: meconium ileus, ileojejunal atresia, and total colonic aganglion.

Meconium ileus is a lower intestinal obstruction due to ileal obstruction by meconium. It is associated with cystic fibrosis in 95% of cases [5]. The unprepared abdomen shows multiple dilated intestinal loops with the presence of meconium that takes on a ground glass or soap bubble appearance. The colonic opacification shows reflux of the contrast medium into the ileum with the presence of subtraction images related to meconium [4].

Ileo-jejunal atresia results from ischemia in the mesenteric arterial territory during fetal life, leading either to complete segmental atresia or to the formation of a fibrous band [5]. The unprepared abdomen shows distension of the intestinal loops and colonic opacification shows either no reflux of the contrast medium into the ileum or reflux into a blind ileal loop, indicating atresia [5].

The distinction between these two forms is very important in the therapeutic decision; in fact, an uncomplicated meconium ileus can be treated by enemas [7] whereas ileal atresia requires surgical intervention [8].

Total colonic a ganglion is a rare form of Hirschsprung's disease. It occurs in 3-12% of cases and is characterized by an absence of intrinsic nerve ganglia that may extend to the ileal ansae [9]. In this case, imaging findings are not specific and confirmation of the diagnosis relies on histology.

CONCLUSION

The discovery of a microcolon during low neonatal obstruction should make one think first of meconium ileus and ileojejunal atresia; the distinction between these two causes is paramount for therapeutic management and requires opacification with water-soluble contrast media. Extensive Hirschsprung's disease is rare but should not be ruled out.

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