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Meconium pseudocyst: A case report

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MECONIUM PSEUDOCYST: A CASE REPORT.

CLINICAL HISTORY:

Term male baby with abdominal distension from day 2 of life. Meconium was not passed. H/o passing infrequent hard stool.

IMAGING FINDINGS

Erect X-ray abdomen:



Fig 1

- A well-defined large radio-opaque mass measuring ~ 10.1 x 8.0cm predominantly in the midline between liver & bladder displacing the bowel loops left laterally. (Fig 1)

CE-CT Abdomen and pelvis:

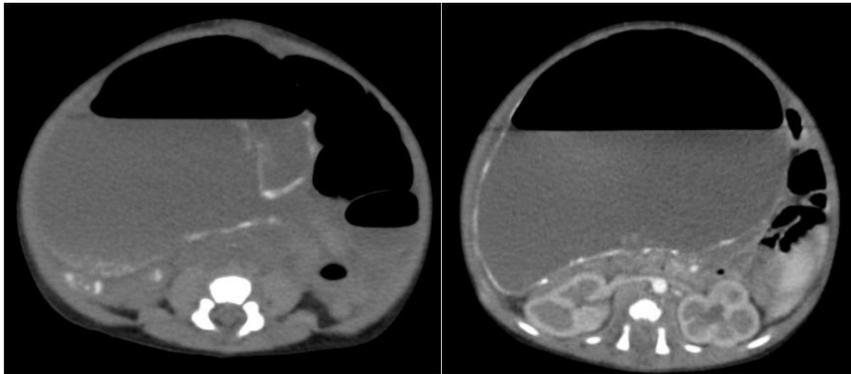


Fig 2, Fig3



Fig4, Fig5

- Large well-defined cystic lesion with air-fluid levels & peripheral calcific rim, predominantly occupying the middle and right abdominal quadrants, located between the bladder dome and the inferior aspect of the liver. (Fig2, Fig3)
- Connected proximally to a small bowel loop (? ileal) which appears atretic for a short segment. The small bowel loops, proximal to the atretic bowel loop appear prominent with air-fluid levels and occupy the left abdominal quadrants. (Fig2, Fig3)
- Mild ascites. Large bowel loops appear collapsed and displaced by the mentioned cystic lesion. Multiple hyperdense particles within the rectum and cecum. (Fig4, Fig5)



Fig 6 (Post-operative)

Surgery: Laparotomy, Excision of meconium cyst and atretic segment of ileum, end to end anastomosis.

HPE: Sections from cyst showed granulation tissue with fibrosis, hemorrhage, calcification in the wall-Atresia. Inner surface - meconium stained.

DIFFERENTIAL DIAGNOSIS [1].

- Meconium pseudocyst.
- Intestinal duplications cyst.
- Mesenteric cyst.

FINAL DIAGNOSIS

- Meconium Pseudocyst.

DISCUSSION

Etiopathogenesis:

The cause of a meconium pseudocyst is uncertain. There is a presumption about an association with dilated intestine caused by intestinal atresia and impaired intestinal blood flow because of an inflammation after intestinal perforation. A meconium pseudocyst may be a complication of a meconium peritonitis and therefore it likely to be misdiagnosed as a cystic-type meconium peritonitis [2].

Meconium peritonitis creates a cystic cavity with a fibrous wall when the inflamed intestinal loops become fixed and the result is named as cystic-type meconium peritonitis [3]. Adhesions between loops of intestine and omentum act to contain the meconium collection extruded into the peritoneal cavity, creating a cystic mass.

The reaction may alternatively result in the formation of a solid non cystic mass with calcium deposits sealing off the perforation. The cystic type is usually formed secondary to a prenatal volvulus with perforation. The generalized type, is the consequence of a peri-natal perforation with meconium spread throughout the abdominal cavity. A meconium pseudocyst may be a complication of a meconium peritonitis and therefore it likely to be misdiagnosed as a cystic-type meconium peritonitis.

The clinical course ranges from spontaneous healing to rapid fatality, depending on the timing of perforation and if the perforation persists after birth.

Imaging:

Plain radiograph - Rim calcified mass within the abdomen

Ultrasound

Antenatal:

- Abdominal calcification.
- Ascites.
- Polyhydramnios.
- Echogenic mass.
- Bowel dilatation.
- Bowel obstruction.

Postnatal:

- Diffuse punctiform hyper-echogenic lesions around the peritoneal cavity.
- Large thick walled meconium-filled cyst containing multiple calcium deposits and plaques.

Contrast enhanced CT

- Finely distributed calcification and the persistent intestinal perforation.
- Intra-abdominal cyst encapsulated by wall calcification, with and without air and fluid contents are seen.
- Cyst connected to the proximal intestine.
- Diffuse calcium deposits along the parietal peritoneum and other intra-abdominal structures.

MRI

- The signal intensity of a meconium pseudocyst is high on T2-W images. On T1-W images, the signal of the cyst might be high, low or intermediate.
- Help to prenatal characterization:
 - The MR diagnostic criteria:
 - (1) The presence of internal septa.
 - (2) Variable signal intensity depending on the age of the cyst, the size, patency of the bowel perforation, whether the meconium is normally produced.
 - (3) Dilatation of the proximal bowel.
 - (4) An absence or reduction of material showing a high T1 signal in the distal colon.
 - (5) No restriction on DWI intraperitoneal cystic mass that shows high on T2-W images.

Treatment:

- The principles of the operation are to restore intestinal continuity, with preservation of at least 50% of intestinal length [5].
- Immediate cyst drainage and decompression through paracentesis following birth.
- For large meconium pseudocysts, a two-stage approach with cyst decortication and temporary enterostomy.

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