Calcified meconium pseudocyst: X-ray diagnosis of meconium peritonitis at birth

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DESCRIPTION

An infant girl was born at term to a mother diagnosed antenatally to have a fetal abdominal cyst and polyhydramnios. At 32 weeks, fetal imaging showed a calcified lesion (4.5×6.2 cm) in the central abdomen. At birth, a calcified cystic lesion suggesting a meconium pseudocyst (MPC) was noted in the X-ray of the abdomen (figure 1). Abdominal ultrasound scan confirmed a large calcified cyst in the central abdomen. The infant underwent laparotomy due to increasing bilious aspirate. Intraoperatively, they found a large MPC with extensive interloop adhesions and ileal atresia with perforation requiring stoma creation. Histopathological report showed ileal atresia with perforation and a large MPC. The child recovered well and underwent stoma closure at 3 months of age.

Fetal meconium peritonitis (MP) is a sterile chemical peritonitis following bowel perforation.1 Cystic type of MP occurs when the inflamed intestinal loops become fixed, leading to formation of an intraperitoneal cyst with a fibrous wall. When the extruded meconium becomes walled off, it can form a cystic, rim-calcified mass reflecting the normal intra-abdominal healing process to contain the perforation.2 MPC, a rare presentation of MP, has thinning of the intestinal wall with a smooth muscle layer connecting the cyst to normal intestine and it lacks epithelium due to inflammation.3 Fetal ultrasonography showing ascites, calcification and bowel dilation strongly indicate MP. In neonates with MPC, X-ray of the abdomen often reveals calcified pseudocyst. X-ray findings in MPC is suggestive but differentiated from cystic type of MP with per-operative findings and histopathology.3

Learning points

▸ Meconium peritonitis (MP) is rare. Fetal scan showing meconium pseudocyst (MPC), calcification and bowel dilation strongly suggests MP.
▸ MPC formation is rare in MP. More than 85% cases of pseudocyst can be diagnosed as calcified cyst in roentgenogram.
▸ X-ray findings alone are not diagnostic in MPC, per-operative findings and histopathology help to differentiate the cystic form of MP from MPC.

Figure 1  Chest and abdominal radiograph showing the presence of intra-abdominal calcification distributed throughout the abdomen, especially in the central location where there is peripheral calcification of a meconium pseudocyst. Punctate calcifications are noted over the liver in the right upper quadrant of the abdomen and in the left upper quadrant where there is linear calcification.

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