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Neonatal Intestinal Obstruction due to Mesenteric Cyst (Case Report)

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ABSTRACT: Mesenteric cysts are rare and usually without specific abdominal finding. We report a case of 25- hours- old newborn, who came with the presentations of an intestinal obstruction which was found during operation. It was a mesenteric cyst and atresia of the small bowel causing intestinal obstruction. The cyst with the adjacent loop was resected and intestinal continuity was restored. Mesenteric cyst was compatible with enteric duplication type in microscopic report.
Key words: Mesenteric Cyst, Neonate, Intestinal Obstruction

CASE REPORT

INTRODUCTIN

Intestinal obstruction is a surgical emergency requiring an exact diagnosis and treatment.

Mesenteric cysts are rare intra-abdominal benign tumors without any characteristic clinical findings (De Perrot et al., 2000) with an incidence of 1 per 100,000 up to 1 per 250,000 hospital admissions (Kurtz et al., 1986; Vanek et al., 1984). Mesenteric cysts have an identical pathogenesis, but may have different histopathological derivation and structures. The group of mesenteric cyst with an enteric origin can be divided into two subgroups including enteric duplication cysts and enteric cysts (Mennemeyer et al., 2000). Treatment of mesenteric cyst is indicated if it becomes symptomatic as a result of the enlargement of the cyst (Raghupathy et al., 2003) or complications.

Case History

A 25-hours- Old Iranian newborn male presented with a history of vomiting since 8 hours prior to admission. He had two episodes of vomiting, the last one was bile stained.

There was no history of feeding and meconium defecation prior to the onset of symptoms. Also there was not any familial history of neonatal diseases of his siblings, his parents were relatives.

The history of prenatal care during pregnancy by ultrasound was reported. The result was a single active intrauterine fetus, regular heart rate, breach presentation, polyhydramnious (Amniotic Fluid Index=23 cm), estimated fetal weight (EFW): 1600 gram, gestational age: mean 30wk +3 days (According to biparietal diameter). It was shown a 53×48 mm thin wall echo free cyst in the center of fetal abdomen which was similar to duplication cyst or lymphangioma. On examination the child's weight was 2700 gram, his head circumference was 33.5 cm and the head to crown length was 48 cm. The findings of physical examinations included regular pulses, 110 beats per minutes, respiratory rates 80 per minute, blood pressure 80/60 mmHg, normal body temperature, anterior fontanel 20×20 mm, posterior fontanel 0.5×0.5 mm, a mild abdominal distention, a mobile and palpable mass on the right lower quadrant about 50× 40 mm, no visible small bowel loop, and bowel sounds were hypoactive. Other congenital anomalies were not detected. Supine abdominal X-ray showed a small intestinal dilatation but colonic shadows were absent, up right abdominal X-ray revealed multiple air fluid levels which were consistent with a small intestinal obstruction.

The blood test results were leukocyte count 3500/mm3, hemoglobin: 12.8 gm/dl (normal value: 14 - 16.5 gm/dl), serum sodium 132 mmol /L (normal value 135-145 mmol/L), Potassium 4.5 mmol/L (normal value: 3.5 to 5.5 mmol/l), and creatinin 0.4 mg/dl (0.3-0.6 mg/dl).

Following stabilizing the patient hemodynamically the next step of treatment was surgery on the patient's abdomen. An abdominal laparatomy was performed by a supra umbilical transverse incision. About 50 ml yellowish free fluid was presented in the abdomen which has been sucked out. Exploration revealed a 50×70 mm cyst located 40 cm far from ileocecal valve. About 20 cm of small intestinal loops of ileum were twisted upon their mesenteric root of cyst presenting a spiral-shape complex. A simple derotational procedure has been done but the obstruction was not relieved. Due to necrosis and atresia the involved part of intestine had a small caliber. The involved parts of the ileum and cyst were resected and an end to end anastomosis was performed. The post-operative period was appropriate and the oral feeding started the day after surgery. The patient had defecation after 48 hours and was discharged 5 days after the surgery. The

macroscopic pathological examination revealed a yellowish fluid inside the cyst, the internal wall of the cyst was non homogenous and had a creamy brown surface with a scant nodular areas describing a cyst which lined by columnar epithelium and muscular layer of the wall. The diagnosis was mesenteric cyst compatible with bowel duplication type.

DISCUSSION

Intestinal obstruction in the newborn infants and older children might be due to different conditions, such as atresia, stenosis, annular pancreas, malrotations, duplication cysts, meconium ileus, meconium plug syndromes, neonatal small left colon syndrome, Hirschsprung's disease, neoplasias, trauma, and some other rare causes (De Backer et al.,1999).

Mesenteric cysts are benign intra-abdominal lesions without any typical clinical findings. Treatment is indicated if they become symptomatic (Shamiyeh et al., 2000). They are rare lesions with an incidence of 1 per 100,000 up to 1 per 250,000 hospital admissions (Kurtz et al., 1986; Vanek et al., 1984). Mesenteric cysts were first described in 1507 by Benevieni and Tillaux who performed the first successful resection for a mesenteric cystic lesion in 1880 (Mollitt et al., 1978).

In the pediatric field, the most of the mesenteric cyst cases are symptomatic (Kwan et al., 2004); intestinal obstruction is a frequent presentation, usually due to compression of the adjacent intestine by the cyst. Approximately two thirds of them are presented with acute abdomen (Mollitt et al.,1978).Mesenteric cysts could be classified according to their histopathological fea¬tures including lymphatic, mesothelial, enteric, urogenital, dermoid cystic and pseudo-cystic(De Perrot et al., 2000). They usually found in the small intestine mesentery (66%) but also in the mesentery of the large intestine (33%), usually in the right colon ((Petersone 1940; Iida et al., 2003; Callego et al.,1996; Guarino et al.,1999; Caropreso 1974; Sardi et al.,1987).The mode of the presentation depends on the size (Mollitt et al.,1978; Al-Mulhim 2003; Dalgic et al., 2005).the location (Mollitt et al.,1978; Dequanter et al 2002), of the cyst and the age of patient (Al-Mulhim 2003;;Dalgic et al 2005) . It's presentation can be acute or subtle and chronic (Hajivassiliou 2003). Different diagnostic modalities could be used to confirm the presence of a mesenteric cyst. They are discovered incidentally during an abdominal ultrasonography and computed tomography or a MRI scan for any another reason (Nakamura et al., 1987; Stoupis et al., 1994; Youn Seung et al., 2010; Callego et al.,1996) . The Ultrasonography and computed tomography tend to be the favored methods (Mason et al., 2001; Duldulao et al., 2008). Ultrasonography is not accurate in the diagnosis and the localization of the cyst origin.in all the cases (Prakash et al., 2010), the abdominal CT scan is more effective than ultrasonography (Santana et al., 2010).Intestinal obstruction is the most frequent complication of mesenteric cysts; other complications include hemorrhage into the cyst, volvulus, rupture, and infection, and cystic torsion, obstruction of the urinary and biliary tract. Malignant mesenteric cysts have not been reported in children(Ricketts et al.,1998).Different Treatment modalities that have been attempted include simple drainage,enucleation,marsuplization and surgical excision(Vikalp et al., 2012).The preferred mode of treatment is an operative resection(Mollitt et al.,1978; Vikalp et al., 2012; . Eun-Ji et al., 2011;MA et al., 2012).A mesenteric cyst can be removed completely by enucleation(Kurtz et al.,1986; Hebra et al.,1993; Ghazimoghadam et al.,2008). Laparoscopic management of mesenteric cysts is also being reported(Trompetas et al 2003; MA et al., 2012 ; Youn Seung et al., 2010; Ghazimoghadam et al., 2008; Polat et al., 2004) .

A successful management of a newborn suffering from bowel obstruction depends largely on making a prompt diagnosis and treatment. The diagnosis usually could be based on the history, physical examination and simple radiographic studies. Lack of specific symptoms and rare incidence makes mesenteric cysts as a diagnostic and therapeutic challenge, undoubtedly awareness of the circumstance would direct to earlier diagnosis with proper treatment.

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