Giant Mesenteric Lipoma as a Rare Cause of Ileus in a Child: Report of a Case

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Abstract
Mesenteric lipoma is a rare benign tumor of mature fat cells. Although generally asymptomatic, it occasionally causes abdominal pain, ileus, and small bowel volvulus, depending on its location and size. A definitive diagnosis can be made by pathological examination. Ultrasonography and abdominal computed tomography show this lesion as a well-defined, homogeneous mass with fat density surrounded by a thin capsule. Because of its rare etiologic origin, we report the case of a 7-year-old girl with a mass in the abdomen and ileus, found to be caused by a mesenteric lipoma.

Key words Giant mesenteric lipoma · Ileus · Child

Introduction
Lipoma is a benign soft-tissue tumor and one of the most common types of mesenchymal neoplasms in adults. It can be single or multiple (lipomatosis) and superficially or deeply localized. In children, lipomas occasionally develop superficially or in the trunk.1,2 Deep lipomas can be localized in the thorax, mediastinum, thoracic wall, pleura, pelvis, retroperitoneum, and paratesticular area, but they rarely originate in the intestinal mesentery in children.1,3–5 There have been sporadic reports of mesenteric lipomas causing intermittent abdominal pain, distension, and intestinal volvulus.3–5 Herein, we report a case of a giant mesenteric lipoma in a 7-year-old girl presenting with intestinal obstruction.

Case Report
A 7-year-old girl was brought to our hospital with a 4-day history of abdominal crampy pain and bile-stained vomiting. She had suffered from transient abdominal pain and vomiting since the age of 3, and during the past 5 months she had experienced episodes of abdominal distension and constipation. On admission, she weighed 17 kg and physical examination revealed epigastric distension, and a painless, soft mass with smooth contours filling the pelvis and lower abdomen. Rectal examination found perirectal fullness. The results of laboratory examinations were all normal, except for mild leukocytosis (14 600/mm3). α-Fetoprotein and β-human chorionic gonadotropin levels were within the normal ranges. Plain abdominal X-ray showed a gasless pelvis and lower abdomen, but laterally deviated and dilated intestinal loops with air-fluid levels. Abdominal ultrasonography and computed tomography (CT) revealed a well-capsulated, unilocular, homogeneous mass, 15 × 13 × 7 cm in size, filling the pelvis and lower abdomen. Rectal examination found perirectal fullness. The results of laboratory examinations were all normal, except for mild leukocytosis (14 600/mm3). α-Fetoprotein and β-human chorionic gonadotropin levels were within the normal ranges. Plain abdominal X-ray showed a gasless pelvis and lower abdomen, but laterally deviated and dilated intestinal loops with air-fluid levels. Abdominal ultrasonography and computed tomography (CT) revealed a well-capsulated, unilocular, homogeneous mass, 15 × 13 × 7 cm in size, filling the pelvis and lower abdomen up to the umbilicus, deviating the intestinal loops (Fig. 1). No other abnormalities were detected. Laparotomy revealed a soft, yellow mass surrounded by a thin capsule originating from the ileal mesentery, which was completely excised with 15 cm of ileum, followed by an end-to-end anastomosis. On gross examination, the mass was 18 × 15 × 5 cm in size, encapsulated, homogeneous, and gray-yellow (Fig. 2). It was attached to 15 cm of ileal mesentery. Microscopically, the tumor was composed of a fibrous capsule and mature fat cells next to the intestinal wall (Fig. 3).

Discussion
Lipomas are benign tumors with a low potential for malignant degeneration. They are most often found in adults between 40 and 60 years of age and rarely occur...
in the first decade of life. Lipomas are the most common soft-tissue tumors and their incidence is far higher than reported. Most lipomas are ignored if they do not cause esthetic problems or any symptoms of their anatomical localization.1,2 The etiology is not well known, although obesity, diabetes mellitus, trauma, radiation, and certain chromosomal translocations and rearrangements have been reported as etiological factors, none of which were applicable to this case.5

Macroscopically, lipomas are soft, well-capsulated, oval, and yellow. Deep lipomas are usually only diagnosed when the tumor grows very big or becomes symptomatic of its anatomical localization. Microscopically, they are uniform and have a centrally located single lipid vacuole with peripheral cytoplasm and nucleus.1,2 The tumor from our patient was oval, soft, yellow, and well-capsulated (Fig. 2).

The intestinal mesentery is an extremely rare site for a deep lipoma. Lipomas generally form a slow-growing, nonlobulated, soft, and mobile mass, which does not penetrate into the surrounding organs.1,2,6 Very occasionally they may cause intermittent abdominal pain, distension, small bowel volvulus, and constipation.3–5 The mesenteric lipoma in our patient caused intermittent abdominal pain at first, then as it grew, epigastric distension and ileus occurred with compression of the intestinal loops. The main sequelae of mesenteric lipoma are intestinal obstruction caused by intestinal volvulus and partial obstruction due to compression.2,3 According to Colovic et al., about 5% of adult cases of small bowel volvulus are caused by mesenteric lipoma.2 The size of the tumor in this case was among the largest reported in the literature.1–5

Roentgenographic examinations may show a well-demarcated, radiolucent area with intestinal obstruction, depending on the size of the tumor, while ultrasonography and CT give detailed information about the fatty nature of the tumor.1,4–7 Angiography and colored Doppler ultrasonography show that the tumor is avascular.6 Roentgenography, ultrasonography, and CT were sufficient for the preoperative diagnosis in our patient.

In the differential diagnosis of mesenteric lipoma, lipoblastoma, lymphangioma, and lymphangiolipoma should all be considered. Lipoblastoma is a benign tumor of immature fat cells, and is localized in the extremities in 60% of cases. Moreover, it is usually seen in childhood.1,5,8,9 However, its nonhomogeneous, septated, and hyperechogenic appearance on ultrasonography and CT makes it easy to differentiate from a lipoma.7 Lymphangioma is easily differentiated by its marked multiseptations and cystic appearance, while