

Imaging diagnosis

Case 439

3. Meckel diverticulitis

【Progress】

He was given antibiotics. He took surgical treatment, revealing Meckel diverticulitis and fecalith.

【Discussion】

Meckel diverticulum is the remnant from the age of fetus. Originally, there is omphalomesenteric duct between yolk sac and primitive midgut to feed fetus, while there is a urachus duct for fetus urine excretion between yolk sac and urinary bladder. Both omphalomesenteric duct and urachus duct function until 7th month after embryo and thereafter, they become to regress from 8th month as placenta grows and replace their functions. They usually disappear at the birth (1). However, it happens that omphalomesenteric duct remains as four types: fistula, cyst, fibrous band and diverticulum. The diverticulum type of omphalomesenteric duct remnant is Meckel diverticulum (1, 2).

Meckel diverticulum is composed of three layers: mucosa, submucosa and muscles, while the common diverticulum of the colon is composed of two layers of mucosa and submucosa, deficit of muscle layer. Then, common colon diverticulum is called false diverticulum, while Meckel diverticulum is called true diverticulum. Meckel diverticulum is usually found at the opposite to the mesentery site (2-4).

In clinical findings of Meckel diverticulum, there are rules of 2's; 2% (0.3-3) incidence of population; occurrence under 2-year-old or less; 2 (2.54 x 2 cm) inch (3-6 cm) long; 2 feet (30.48 x 2) distance (40-100cm) from ileum end; 2 ectopic tissues, pancreas and stomach (2-5).

Various complications of Meckel diverticulum are found; hemorrhages, ulcers, perforation, chronic anemia caused by pancreatic and gastric tissues; small bowel obstruction caused by remnant fibrous band; diverticulitis by mechanical irritation (5-7).

Meckel diverticulitis is caused by various factors; ectopic tissues of gastric and pancreatic; ingested vegetables, seeds, fish bones, chicken bones, occlusion due to tumor. As the differential diagnosis, acute appendicitis, appendix mucocele are listed (2, 3).

In our case, the high attenuation found at the site of Meckel diverticulum was fecal stone. Meckel diverticulum is sometimes difficult on non-enhanced CT, simply because large cystic diverticulum looks like a portion of dilated small bowel. In fact, the patient with intellectual disability had an information of dental problem, so that artificial tooth was thought to have irritated ileum mucosal layer, inducing pneumo-emphysema intestinalis and mild perforated peritonitis. The following contrast-enhanced CT demonstrated the discontinuous cystic lumen, leading to the diagnosis of Meckel diverticulitis.

【Summary】

We presented a thirty-seven-year-old male with persistent abdominal pain and fever. Laboratory test revealed marked elevation of leukocytes and CRP, suspicious of acute appendicitis or colon diverticulitis. Abdomen CT demonstrated calcified ingested foreign body and cystic air accumulation with no communication with small intestine lumen at the right middle abdomen, associated with mild peritonitis, diagnostic with Meckel diverticulitis. It is borne in mind that digested foreign body can cause Meckel diverticulitis, that it is found in the right middle abdomen or lower abdomen. Further, mesentery foggy sign and edematous small bowel mural thickening are the point where the pathogenic origin is there, Meckel diverticulitis is the origin in this case.

【References】

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