中文題目：急性胰臟炎在腹部Ｘ光合併表現“colon cut-off”跟“Sentinel loops” signs

英文題目：Acute pancreatitis with concurrent “colon cut-off” and “sentinel loops” signs on an abdominal x-ray film

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Introduction:

Acute pancreatitis (AP) is a common disease and may cause mortality. Abdominal x-ray is widely applied in daily clinical practice. Colon cut-off and sentinel loops are possible radiographic findings for AP, which had been separately described in previous literature. Herein, we report a case of AP with both signs at the same time on a radiograph. An x-ray examination is still a recommended initial survey for patients with acute abdomen.

Case presentation:

A 42-year-old man denied any underlying diseases. He had no alcohol abuse but was a heavy smoker. The baseline body mass index was 29.1. He was presented to the emergency department with abdominal pain and fullness sensation for 2-3 days. Other associated symptoms included fever up to 38'C, poor appetite, and nausea. Physical examination revealed left upper quadrant abdominal pain, and diffuse tenderness. Initial laboratory testing revealed neutrophilic leukocytosis (20900/uL), elevated lipase (347 U/L), liver function tests (GOT/GPT: 60/90IU/L), hyperbilirubinemia (direct/ total=0.3/1.33 mg/dL), severe hypocalcemia (1.32 mg/dL). Further blood examinations were negative or within normal limits, including markers for hepatitis B and C, immunoglobulin G4, glycated hemoglobin, parathyroid hormone, and lipid profiles. Antinuclear antibody (ANA) showed borderline positive (1:40). Abdomen x-ray revealed both colon-cut-off sign and small bowel sentinel loops. Abdominal sonography revealed ascites, bilateral mild pleural effusion, no gallbladder stone, no dilated common bile duct, and no sonographic Murphy's sign. A computed tomographic (CT) scan of the abdomen showed 1) compatible with AP (Balthazar score grade D). 2) uneven fatty liver. 3) ascites in the peritoneal space. NPO and adequate hydration were performed initially and gradually adjusted according to his nutrition status. Under proper treatment, his clinical condition was improving gradually and we finally discharged him after 9-day hospitalization.

Discussion:

The colon cut-off sign presents the absence of gas in the colon distal to the splenic flexure, which is secondary to pancreatic inflammation. Sentinel loop means a short segment of adynamic ileus close to an intra-abdominal inflammatory/infectious process, which may aid in localizing the focus of lesion.

In AP, an abdominal X-ray is not considered a diagnostic criterion because of its low sensitivity and specificity. However, in this case, the X-ray showed both findings with colon cut-off sign and sentinel loops. After combined with the two clinical evidence, we highly suspected that there was AP, and further abdominal CT confirmed the impression. Abdominal X-ray has the advantage of lower cost and suitable for prompt screening. By this case, we learned that the combination of colon cut-off sign and sentinel loops can increase the specificity and help us to be alert with AP earlier.

In this case, he did not have the common etiology of AP, such as alcohol, gallstones, hypertriglyceridemia, and hypercalcemia etc. Although his ANA revealed positive, about 20-30% of healthy individuals may have positive ANA of 1:40. Unfortunately, he lost follow-up after discharge, so we did not have the chance to perform a complete evaluation.

Conclusion:

Although the currently recommended diagnostic and staging tools for AP do not include radiographs, the combination of colon cut-off sign and sentinel loops seems to increase the specificity for the diagnosis. Clinicians should be aware of these radiographic characteristics and consider to order a plain x-ray film in cases with acute abdomen.