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CASE REPORT

Delayed Bowel Stricture Complicating Superior Mesenteric Vein Thrombosis

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Superior mesenteric thrombosis is a rare disease of acute abdomen; many risk factors have been identified including arrhythmia, deep vein thrombosis, and hematologic or rheumatologic causes. Image study is more helpful than laboratory test. The standard therapy is anticoagulant (unfractionated heparin or low-molecular-weight heparins) administration, but there is still low possibility to need surgery for the complications such as bowel stricture or ischemic bowel disease. We describe the case of acute abdominal pain, the computed tomography showed superior mesenteric thrombosis, and the patient received the therapy with unfractionated heparin and the procedure of superior mesenteric arteriography with intravascular thrombolytic therapy. However, the complication of delayed bowel stricture occurred, which was proved by upper gastrointestinal series. Then, he was cured by surgical intervention with segmental resection of small bowel.

Key words: Bowel stricture, superior mesenteric thrombosis, acute abdomen

INTRODUCTION

Superior mesenteric vein thrombosis is the difficult diagnosis for acute abdomen at initial time. Computed tomography (CT) is a more helpful tool for accurate diagnosis than other investigations such as blood sampling or X-ray. Standard therapy for superior mesenteric vein thrombosis is intravenous anticoagulant, and it is effective in most cases without obvious complications. In our case, the patient finished the course of anticoagulant therapy and the symptoms relieved. However, the patient had the recurrent abdominal pain, the delayed complication of bowel stricture was confirmed by the upper gastrointestinal barium study, and the surgeon performed further surgical intervention.

CASE REPORT

A 27-year-old man presented with progressive abdominal pain, accompanied by vomiting that had lasted for 3 days. Initial physical examinations demonstrated muscle guarding and tenderness over the epigastric region. Laboratory investigations showed a white blood cell count of 23,000/uL (reference range, 4000–10,000/uL), C-reactive protein level of 14.21 mg/dL (reference range, <0.5 mg/dL), D-dimer level of 6923 ng/mL (reference range, <0.5 ng/mL), and creatine kinase level of 429 U/L (reference range, 30–160 U/L). Amylase levels were within normal limits [Table 1]. Abdominal contrast-enhanced CT revealed superior mesenteric vein thrombosis [Figure 1a]. The patient recovered after receiving intravenous anticoagulant therapy. However, he continued to feel full and to vomit after eating meals. About 2 weeks later, an upper gastrointestinal barium study revealed a marked obstruction over the junction between the duodenum and jejunum [Figure 1b]. Differential diagnoses included ischemic bowel disease, intestinal obstruction, and bowel stricture. His symptoms were severe and progressive with rebound tenderness and muscle guarding. A general surgeon performed an exploratory laparotomy with adhesiolysis and segmental resection of the jejunum based on a diagnosis of bowel stricture. Five days after surgery, he began liquid diet

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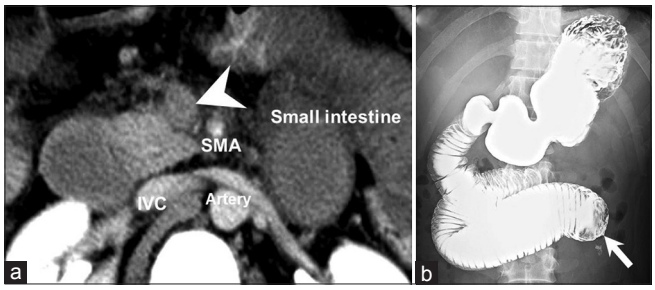

Figure 1: (a) Computed tomography with contrast enhancement of the abdomen reveals superior mesenteric vein thrombosis (white arrow head) adjacent to the superior mesenteric artery. (b) Upper gastrointestinal barium study reveals marked obstruction over the junction between the duodenum and jejunum (white arrow)

followed by a semi-liquid diet after the first flatus and normal bowel sounds were heard on auscultation; he was gradually able to tolerate a normal diet. The patient was discharged 2 weeks postoperatively, and no recurrence of abdominal pain was reported at the 3-month follow-up visit.

DISCUSSION

Mesenteric vein thrombosis is an uncommon disease associated with acute abdomen, and many risk factors have been identified such as intra-abdominal or hematological causes, patent or latent myeloproliferative syndrome, protein C or S, and antithrombin III or plasminogen activator deficiencies.[1] Unfortunately, no obvious etiology could be identified for this case in spite of intensive examinations. The incidence is 5%–15% of all mesenteric ischemia cases, and accurate diagnosis often requires the use of contrast-enhanced CT, which has a high sensitivity (90%–100%). The prevalence of mesenteric vein thrombosis has increased in the past two decades due to the convenient use of contrast-enhanced CT.[2,3] The pathophysiology of mesenteric vein thrombosis is associated with an insufficiency of venous return from the bowels, and progression occurs due to venous engorgement and ischemia. Due to its rapid course and the complete occlusion of the mesenteric veins, there is not sufficient time to develop collateral circulation. Secondary arterial spasms may develop from venous engorgement despite the use of anticoagulant therapy for thrombosis. Irreversible bowel ischemia may occur due to transmural infarction and loss of bowel mucosa integrity, resulting in more complications including bacterial translocation and potential metabolic acidosis, sepsis, multiple organ dysfunction, and death.[3] Anticoagulant therapy is successful in most cases, which then do not require surgical intervention. However, the possibility of delayed bowel stricture for patients with mesenteric vein thrombosis should be carefully monitored, even if treatment with anticoagulant therapy is successful. If this complication occurs, surgical intervention is usually required.[4]

Table 1: Laboratory data

Variable	Value	Reference range
White blood cell count (/mm^3)	23,000	4000-10,000
C-reactive protein (mg/dL)	14.21	<0.5
D-dimer (ng/mL)	6923	<0.5
Creatine kinase (U/L)	429	30-160
Amylase (U/L)	39	28-100
Lipase (U/L)	7	13-60
Protein C (%)	85.6	70.0-140.0
Protein S (%)	95.4	60.0-145.0
Antithrombin III (%)	72.0	70.0-120.0
Lupus anticoagulant (s)	1.07	<1.20

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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