Wilkie’s Syndrome: Case Report and Surgical Approach in a Patient with High Intestinal Obstruction

Abstract

Superior mesenteric artery syndrome (SMAS), also known as Wilkie’s syndrome, is a rare cause of upper intestinal obstruction due to duodenal compression between the abdominal aorta and the superior mesenteric artery. This condition arises from a decreased aortomesenteric angle and distance, typically following significant weight loss. We report the case of a 38-year-old male with upper intestinal obstruction symptoms and unintentional weight loss. A diagnosis of SMAS was confirmed via contrast-enhanced CT revealing a 17° aortomesenteric angle and a 7 mm distance. The patient underwent a laparoscopic duodenojejunostomy in a Roux-en-Y configuration with an uneventful recovery. This report highlights the importance of early recognition and surgical intervention in SMAS to avoid complications.

Keywords

Wilkie’s syndrome; intestinal obstruction; superior mesenteric artery; duodenojejunostomy; laparoscopic surgery

Introduction

Superior mesenteric artery syndrome (SMAS) is an uncommon but significant condition characterized by the external compression of the third portion of the duodenum between the superior mesenteric artery and the aorta. This narrowing is primarily due to rapid loss of retroperitoneal fat, reducing the normal aortomesenteric angle (38–65°) and distance (10–33 mm). SMAS has an estimated incidence of 0.013–0.3% in the general population [1]. The clinical presentation is often nonspecific, with symptoms including early satiety, postprandial fullness, nausea, vomiting, and weight loss, which delays diagnosis [2,3]. Imaging studies, especially contrast-enhanced CT, are essential for identifying anatomical criteria of SMAS. This condition may be secondary to rapid weight loss due to trauma, burns, anorexia nervosa, or chronic illness [4].

Case Presentation

A 38-year-old male presented with a 7-day history of intense abdominal pain, nausea, vomiting, and absence of bowel movements. His history included tobacco, marijuana, and methamphetamine use, with a reported weight loss of approximately 20 kg over the previous months. Initial laboratory tests revealed leukocytosis (20.8 x10^9/L), serum creatinine of 1.34 mg/dL, CRP 1.69 mg/dL,

and procalcitonin of 1.28 ng/mL. Contrast-enhanced abdominal CT showed gastric and proximal duodenal distension with abrupt caliber change at the third portion, and an aortomesenteric angle of 17°, along with a 7 mm distance, confirming SMAS. Initial conservative management with nasogastric decompression and nutritional support was attempted for 5 days without sufficient improvement. The patient subsequently underwent elective laparoscopic duodenojejunostomy with Roux-en-Y reconstruction. The third portion of the duodenum was mobilized (Kocher maneuver), and an anastomosis was created using a 45 mm linear stapler and reinforced with V-Loc 3-0 suture and serosal Lambert stitches. Estimated intraoperative blood loss was 10 mL. Postoperative recovery was uneventful: the contrast study at 24 hours showed no leak, oral intake resumed at 72 hours, and discharge occurred on postoperative day 5.

Discussion

SMAS is a rare condition, frequently underdiagnosed due to the vague nature of gastrointestinal symptoms. In many cases, weight loss precedes the onset of symptoms, as in our patient, highlighting the role of nutritional depletion in pathogenesis [5,6]. CT and MRI are valuable tools for measuring the aortomesenteric angle and distance. An angle <22° and distance <8 mm are diagnostic indicators [7]. Although conservative treatment is recommended initially (nutritional support, positional therapy), surgery becomes necessary when symptoms persist or complications arise. Laparoscopic duodenojejunostomy is considered the gold standard due to lower morbidity, quicker recovery, and favorable cosmetic outcomes [8,9]. Studies have demonstrated high success rates with laparoscopic approaches, with resolution of symptoms and early return to oral intake [10]. Our case supports these findings and emphasizes the importance of timely surgical referral in nonresponding patients.

Conclusion

SMAS should be considered in patients with upper gastrointestinal obstruction symptoms and a history of rapid weight loss. Timely diagnosis and treatment, including surgical intervention when indicated, can result in excellent outcomes. Laparoscopic duodenojejunostomy remains the preferred approach for definitive management in selected patients.

Informed Consent

Written informed consent was obtained from the patient for publication of this case and accompanying images.

Conflict of Interest

The authors declare no conflict of interest.

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