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Laparoscopic Duodenojejunostomy for a Rare Case of Wilkie's Syndrome

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Abstract

Superior Mesenteric Artery syndrome, also known as Wilkie's syndrome, is a rare upper GI disorder presenting with recurrent vomiting and weight loss. It is due to the compression of the third part of the duodenum by the superior mesenteric artery (SMA) for various reasons. Contrast CT scan of the abdomen will confirm the diagnosis. Laparoscopic duodenojejunostomy is now the standard of care for lasting relief for this unusual cause of proximal bowel obstruction. We have reported an interesting case of SMA syndrome in a young girl and discussed the technical tips for safe laparoscopic surgery.

Keywords: Wilkie's syndrome, SMA syndrome, Duodenojejunostomy.

Introduction

Superior mesenteric artery (SMA) syndrome, also known as Wilkie's syndrome, is a rare cause of intestinal obstruction due to the compression of the third part of the duodenum between the aorta and SMA. The condition occurs due to a significant reduction in the aorto-mesenteric angle and distance due to various reasons. It predominantly affects thin adolescents and young adults, especially females (Welsch et al., 2007; Neri et al., 2005).

Clinically, SMA syndrome presents with postprandial abdominal pain, early satiety, nausea, persistent bilious vomiting, and progressive weight loss. The final diagnosis is based on clinical presentation along with a contrast-enhanced CT demonstrating duodenal compression (Matheos et al., 2009; Massoud, 1995).

Initial management is conservative, aimed at restoring weight and mesenteric fat. Failure of conservative therapy needs operative intervention, with laparoscopic duodenojejunostomy the preferred surgical option due to high success rates and low morbidity. This report describes an adolescent female with SMA syndrome, who showed significant clinical improvement following laparoscopic duodenojejunostomy.

Case Report

An 18-year-old female presented with a 2-year history of loss of appetite, early satiety, and significant weight loss. She also had recurrent episodes of bilious vomiting, predominantly postprandial. There was no history of recurrent abdominal pain, gastrointestinal bleeding, or prior abdominal surgery. On examination, she appeared severely emaciated with a thin body habitus. Her abdomen was soft and non-tender with no palpable mass. Routine blood investigations were within normal limits. Even after the 3-month holistic management program consisting of nutritional rehabilitation, dietary modification, her symptoms persisted, and there was no weight gain.

Upper GI Endoscopy showed a dilated stomach and a dilated duodenum. (Fig 1 A & B)

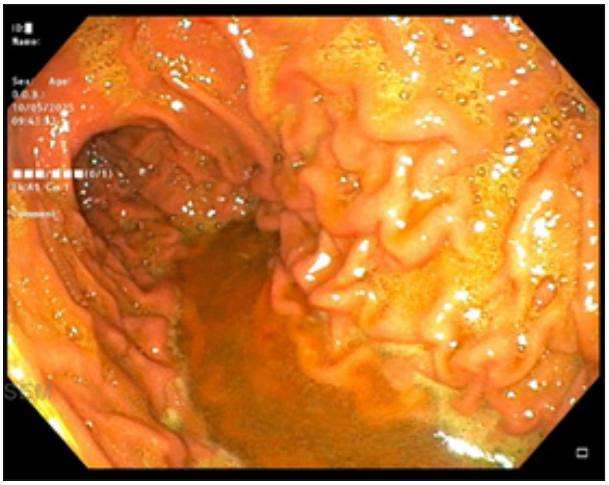


Figure 1 A: Dilated Stomach

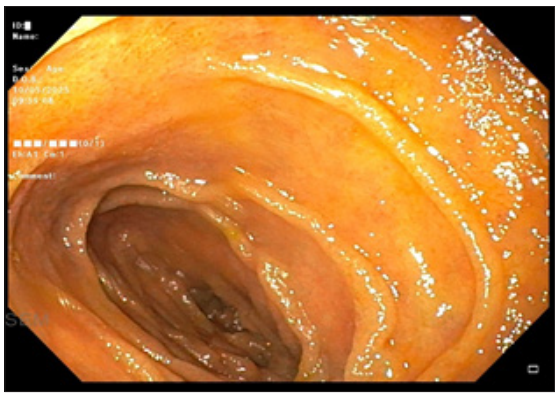


Figure 1 B: Dilated duodenum

Contrast-enhanced CT abdomen revealed a dilated stomach, and the Duodenum (Fig 2A & B) with significantly reduced aortomesenteric angle and distance (Aorta mesenteric angle- 6 degrees & Aorta mesenteric distance - 3mm), along with compression of the third part of the duodenum. (Fig 3).

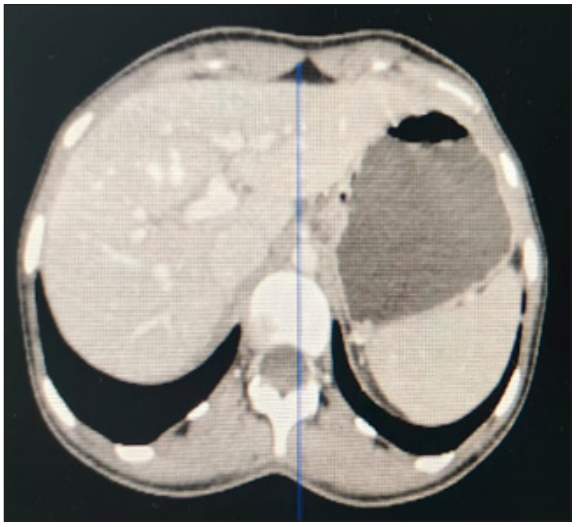


Figure 2 A: Dilated stomach

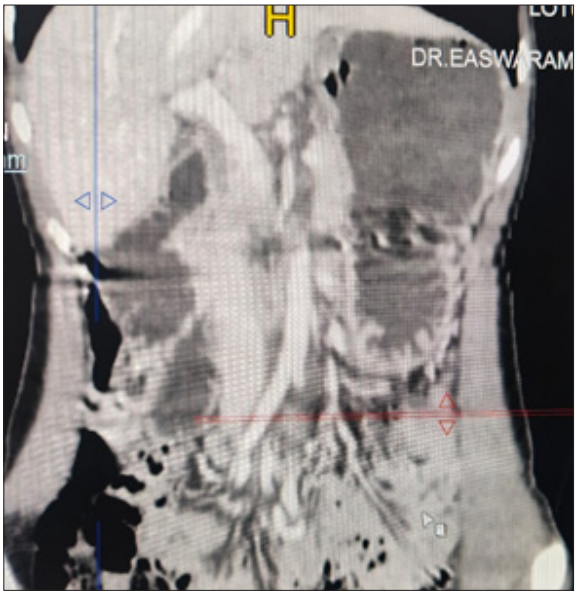


Figure 2 B: Dilated duodenum

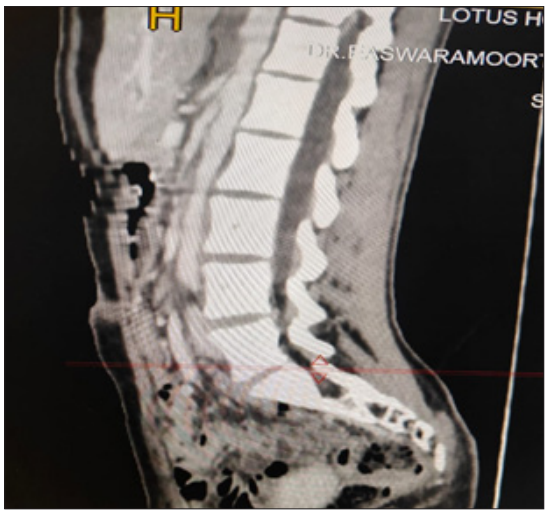


Figure 3: Narrow aorta mesenteric angle

Given the refractory symptoms, she underwent laparoscopic duodenojejunostomy. (Fig 4).

4 ports were inserted. Three 5 mm ports (including subumbilical 5mm optical port for 5mm 30 degree laparoscope) and one 12 mm port for staple. The patient was in a supine head-down position to expose the infra-colic compartment. The 2nd and 3rd part of the duodenum was widely mobilised, taking care not to injure the SMA pedicle. Duodenojejunal junction was identified, and proximal jejunum about 2 feet from the DJ flexure was brought near the mobilised duodenum, and side-to-side anastomosis was done using a 60mm linear white stapler. The enterotomies were closed with 2-0 Vicryl, and ports were closed after confirming anastomotic integrity with methylene blue infusion via nasogastric tube.

The patient had a smooth postoperative period and was discharged on the 3rd day. She was asymptomatic and gained 2 kg when reviewed 3 months after the surgery.

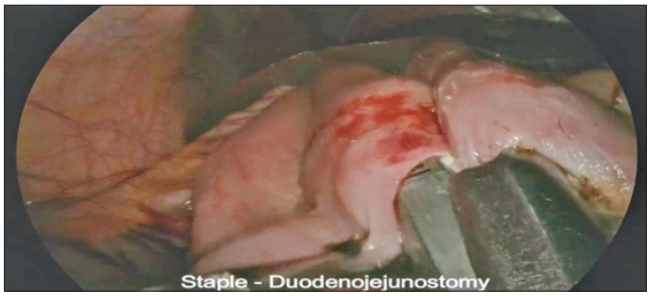


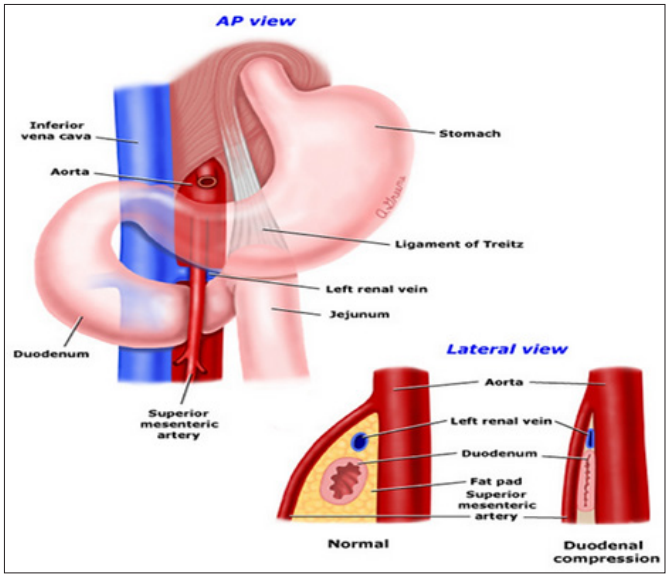
Figure 4: Laparoscopic staple duodenojejunostomy

Discussion

SMA syndrome is an uncommon but important cause of chronic upper gastrointestinal obstruction. The mechanism is the loss of the retroperitoneal fat pad, leading to narrowing of the aortomesenteric angle (<22°) and distance (<8–10 mm), resulting in duodenal compression.

Other mechanisms of duodenal obstruction described include loss of mesenteric fat pad, upward traction on the duodenum, or congenital anomalies of intestinal rotation and also post-

surgical spinal deformity that narrows the aorta mesenteric angle (Unal et al., 2005).



The estimated Prevalence of SMAS in the general population ranges from 0.3% to 0.013, with females aged 10 to 40 being the most typically affected. Our patient presented with the classic symptoms, namely, postprandial fullness, bilious vomiting, and chronic weight loss.

The initial approach to SMA syndrome is usually conservative therapy, aiming to restore mesenteric fat through high-calorie nutrition, postural changes such as left lateral or prone positioning after meals, and prokinetic agents. Reported success rates vary widely (20–50%).

In our case, symptoms persisted despite a three-month conservative management, indicating failure of non-operative management.

The Treitz Ligament Division (Strong's Operation), partial gastrectomy, Billroth II Gastrojejunostomy, duodenojejunostomy, anterior repositioning of the intestinal tract, duodenal derotation, and duodenal resection are among the various surgical techniques used to treat Superior Mesenteric Artery Syndrome (Hines et al., 1984). The Superior mesenteric artery transposition is another rare surgical technique. But laparoscopic duodenojejunostomy is now considered the gold standard when conservative therapy fails (Shiu et al., 2010). Compared with traditional open surgery, it offers faster recovery, fewer complications, and better long-term outcomes, with success rates of more than 90%. Our patient experienced complete symptom resolution and progressive weight gain, which confirmed the effectiveness of this procedure.

This case also highlighted the importance of early diagnosis and timely surgical intervention when conservative measures are insufficient, especially in chronically symptomatic young patients.

Conclusion

SMA syndrome should be considered in adolescents and young adults presenting with chronic postprandial symptoms and unexplained weight loss. Persistent cases benefit from laparoscopic duodenojejunostomy, which provides better symptom relief and nutritional recovery.

QR code for video clip of Laparoscopic duodenojejunostomy.

References

1. Welsch, T., Büchler, M. W., & Kienle, P. (2007). Recalling superior mesenteric artery syndrome. *Dig Surg, 24*(3), 149–56. DOI: https://doi.org/10.1159/000102097
2. Neri, S., Signorelli, S. S., Mondati, E., Pulvirenti, D., Campanile, E., Di Pino, L., Scuderi, M., Giustolisi, N., Di Prima, P., Mauceri, B., Abate, G., Cilio, D., Misseri, M., & Scuderi, R. (2005). Ultrasound imaging in the diagnosis of superior mesenteric artery syndrome. *J Intern Med, 257*(4), 346–51. DOI: https://doi.org/10.1111/j.1365-2796.2005.01456.x
3. Matheos, E., Vasileios, K., Ioannis, B., Dimitrios, Z., & Kostas, H. (2009). Superior mesenteric artery syndrome. *Case Rep Gastroenterol, 3*(2), 156–61. DOI: https://doi.org/10.1159/000209866
4. Massoud, W. Z. (1995). Laparoscopic management of superior mesenteric artery syndrome. *Int Surg, 80*(4), 322–327. https://pubmed.ncbi.nlm.nih.gov/8740677/
5. Unal, B., Aktas, A., Kemal, G., Bilgili, Y., Güliter, S., Daphan, C., & Aydinuraz, K. (2005). Superior mesenteric artery syndrome: CT and ultrasonography findings. *Diagn Interv Radiol, 11*(2), 90–95. https://pubmed.ncbi.nlm.nih.gov/15957095/
6. Hines, J. R., Gore, R. M., & Ballantyne, G. H. (1984). Superior mesenteric artery syndrome. Diagnostic criteria and therapeutic approaches. *Am J Surg, 148*(5), 630–632. DOI: https://doi.org/10.1016/0002-9610(84)90339-8
7. Shiu, J. R., Chao, H. C., Luo, C. C., Lai, M. W., Kong, M. S., Chen, S. Y., Chen, C. C., & Wang, C. J. (2010). Clinical and nutritional outcomes in children with idiopathic superior mesenteric artery syndrome. *J Pediatr Gastroenterol Nutr, 51*(2), 177-182. DOI: https://doi.org/10.1097/mpg.0b013e3181c7bdda