Case Report

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Superior mesenteric artery syndrome

Vikrant Mohan Bhagvat*, Juily Vishwanath Aher, Nimesh Shah

Department of Surgery, Sanjeevani Hospital, Dadar, Mumbai, Maharashtra, India

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*Correspondence:

Dr. Vikrant Mohan Bhagvat, E-mail: drvbhagvat@gmail.com

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ABSTRACT

Superior mesenteric artery syndrome (SMAS) is a rare condition caused by compression of the transverse portion of the duodenum between the superior mesenteric artery (SMA) and the aorta, causing symptoms of duodenal outflow obstruction. We report a case of superior mesenteric artery syndrome in a 25-year-old female associated with rapid loss of weight and intermittent vomiting and resulting in severe duodenal compression that necessitated surgical treatment.

Keywords: CECT, SMAS, SMA

INTRODUCTION

Superior mesenteric artery syndrome is a rare condition first described by Rokitansky in 1861. The condition results from a reduced angle between the artery at its origin from the abdominal aorta and the transverse third part of the duodenum causing duodenal obstruction.

Diagnosis of the syndrome depends on high index of suspicion, augmented by the radiological features of the syndrome. Treatment can either be conservative or operative, depending on the severity of the condition.

CASE REPORT

A 25 year old female admitted with the complaint of recurrent abdominal pain, epigastric fullness, vomiting and weight loss. Pain was colicky in nature since 8 months for which he was taking treatment from private practitioner. It was precipitating by eating food and relieved after bouts of vomiting (undigested food).

Her vitals were stable. Abdominal examination were within normal limits. Routine blood reports were within normal limits. Ultrasonography (USG) of the abdomen

was normal. Contrast enhanced computed tomography (CECT) showed focal compression of the third part of the duodenum between the SMA and the aorta, with reduction of the aorto-mesenteric distance as well as the aorto-mesentric angle.



Figure 1: The SMA acute angle.

Laparoscopic surgery was performed. Ports were put two on left side and one on the right side along the line of umbilicus, along with the umbilical port. Short gastrics were cut with harmonic from fundus to 5 cm to pylorus, the narrowing of the duodenum and the acute angle of the SMA visualized.

The small bowel mobilized from DJ flexure. Covedient stapler 60 used to create an anostomosis between stomach and the jejunum. Leak test done with methylene blue, no leak found. Gastrograffin dye studies done on the 5th post-operative day. The patient was discharged on the 7th day.

DISCUSSION

SMA syndrome was first described by von Rokitanski in 1861.¹ Wilkie later provided a more detailed anatomical, clinical and patho-physiologic description and named it chronic duodenal ileus.² Wilkie later published one of the largest series, total 75 cases in 1927.³ The incidence of this condition varies form 0.013-0.3% of the barium series of the upper GI tract.^{3,6,8} Normally the aortomesenteric angle and aorto-mesenteric distance is 25°-60° and 10 to 28 mm respectively.

Both parameters are reduced in SMAS, with values of 6° to 15° and 2 to 8 mm respectively. Other causes include an abnormal high , fixed position of ligament of Treitz , unusually low origin of the SMA, a short ligament of Treitz and decrease of the aorto-mesenteric angle causing compression of 3rd part of duodenum by peritoneal adhesions and is due to loss of retroperitoneal fat which normally acts like cushion around the SMA.⁴⁻⁷ Patient predominantly presented with weight loss and vomiting depending on the cause and degree of duodenal compression. Generally literature says that, the symptoms are relieved by lying prone/ left lateral decubitus, but there was no relief in our case.

The diagnosis of SMAS is based mostly on clinical symptoms and radiologic evidence of obstruction by Barium studies and CT scan. Presently, surgical treatment (either laparoscopic or open method) is the only accepted way of managing SMAS, as conservative treatment is rarely successful.

CONCLUSION

Superior mesenteric artery syndrome (SMAS) is a rare condition caused by compression of the transverse portion of the duodenum between the superior mesenteric artery (SMA) and the aorta. Symptoms are non-specific and the diagnosis depends on high index of suspicion. MRA, being not invasive, is rapidly replacing the arteriogram in confirming the diagnosis. Conservative management may be sufficient in early cases. Duodenojejunostomy or gastrojejunostomy is the surgical treatment of choice.

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