

Superior Mesenteric Artery Syndrome: A Case Report

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Abstract: Superior mesenteric artery (SMA) syndrome is a rare acquired disorder upper intestinal obstruction due to compression of the third part of the duodenum between the SMA and the aorta. We report a case of 21 years old girl who presented with upper G.I. obstruction. superior mesenteric artery syndrome to be implicated to the majority of patients without history of weight loss. Duodenojejunostomy is superior to gastrojejunostomy in SMA syndrome.. Although open and laparoscopic duodenojejunostomy have been described as the best surgical treatment options for Wilkie's syndrome.

Keywords: Superior mesenteric artery syndrome, Wilkie's syndrome, arteriomesentric duodenal compression

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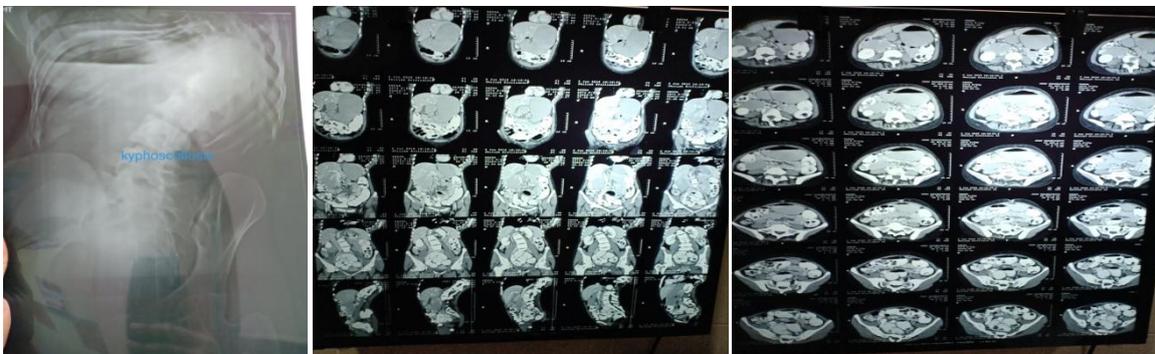
I. Introduction

Superior mesenteric artery syndrome (SMAS) also known as Wilkie's syndrome, cast syndrome and arteriomesentric duodenal compression was first described in 1861 by Rokitansky[1,2]. The most characteristic symptoms are post-prandial epigastric fullness with pain, eructation, and bilious vomiting. It commonly occurs due to the compression of the third part of the duodenum between the superior mesenteric artery and the aorta [3]. It's a disease of exclusion. This syndrome can occur as an acute illness but patient generally has a longer history. The first proposed surgery for SMAS was described as duodenojejunostomy by Bloodgood [2].

II. Case Report

A 21 year young girl admitted with the complaint of recurrent abdominal pain, epigastric fullness, vomiting and weight loss. Pain was colicky in nature since 6 months for which she was taking treatment from private practitioner. It was precipitating by eating food and relieved after bouts of vomiting (undigested food) and knee elbow position. She had a h/o multiple hospital admission for same complain and managed coservativley.

Her vitals were stable. Abdominal examination revealed epigastric fullness and hyper peristaltic bowel sounds with marked kyphosis. Routine blood and urine examination were normal. Ultrasonography (USG) of the abdomen was suggestive of duodenal obstruction. Contrast enhanced computed tomography (CECT) showed duodenal narrowing in mid D3 between aorta and SMA with proximal dilatation of duodenum and stomach. Distance between aorta and SMA was 4mm and angle is reduced s/o SMA syndrome.



Figur 1,2,3 showing kyphosis and duodenal obstruction

The clinical symptoms and signs with investigative findings suggested the diagnosis of SMAS. Surgical treatment was opted after failure of initial conservative treatment.. So we post the pt for duodenojejunostomy.

Exploratory laparotomy through a midline incision was done. Intra-operative findings confirmed the extrinsic obstruction of third part of duodenum with distension of 2nd part along with acute angulation of ligament of Treitz. A retrocolic duodenojejunostomy, side to side anastomosis done. In post-operative follow up, patient was symptom free and started taking normal diet and added some weight.

III. Discussion

SMA syndrome was first described by von Rokitsanski in 1861[1]. The pathogenic mechanism, as described by Wilkie in 1927, involves a small aorto-mesenteric space and extrinsic compression of the third portion of the duodenum between the SMA and the posterior structures. The incidence of this condition varies from 0.013-0.3% [3,6,8]. Normally the aorto-mesenteric 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. Several pathophysiological theories have been advanced as the role of the mesenteric lymph nodes and the existence of a hypertrophied Treitz ligament. But the most common cause of SMA syndrome is severe weight loss including trauma, burns, chemotherapy, anorexia nervosa and/or after prolonged bed rest causing a massive and rapid reduction in the thickness of adipose tissue of the aorto- mesenteric space which is normally supposed to maintain the aorto mesenteric angle open and protects the duodenum of the vascular compression [3,4].

The differential diagnosis of superior mesenteric artery syndrome includes other causes of small bowel obstruction, as well as diseases associated with duodenal dysmotility (megaduodenum), including diabetes, collagen diseases, scleroderma and chronic idiopathic intestinal pseudo-obstruction [12].

The diagnosis of SMAS is based mostly on clinical symptoms and radiologic evidence of obstruction by Barium studies and CT scan. Myung Seok Shin et al. [9] reported a study including eighteen children with SMAS, medical management was successful in 72.2% and the median duration of this treatment was 45 days. If medical management fails, surgery should be contemplated. Surgical findings in our case were compression of third part of duodenum due to extrinsic compression. Conservative treatment failed so surgery was performed. Presently, surgical treatment (either laparoscopic or open method) is the only accepted way of managing SMAS, as conservative treatment is rarely successful. On third post-op day, patient took orally liquids and later on accepted normal diet. Patient responded very well to surgery.

IV. Conclusions

SMAS is a rare cause of duodenal obstruction. Contrast-enhanced computed tomography (CT) is a noninvasive tool for diagnosis. First intention treatment is conservative management but surgery may be necessary. Duodenojejunostomy should be the preferred technique as it seems to offer the best outcome.

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