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Superior Mesenteric Artery Syndrome in a Young Male: A Rare Case Report

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Abstract: ***Introduction: Superior mesenteric artery (SMA) syndrome is a rare acquired disorder in which acute angulation of SMA causes compression of the third part of the duodenum between the SMA and the aorta, leading to obstruction. Case report: A 18-year-old male patient presented to PDU Civil hospital Rajkot with complaints of abdominal pain, nausea and occasional vomiting since 7 days. The vomiting was aggravated after each meal. Patient was managed conservatively initially, surgical intervention done after failure of response to conservative management. Patient posted for surgery and undergone Laparoscopic Duodenojejunostomy after 5 days of conservative management. Discussion: The Superior Mesenteric Artery usually forms an angle of approx.45°with the abdominal aorta at its origin, while the third part of the duodenum crosses in between the SMA anteriorly and aorta posteriorly. Any factor that sharply narrows this aortomesentric angle (to less than 25°approx.) can cause entrapment and compression of the third part of the duodenum as it passes between the SMA and aorta, resulting in the Superior Mesenteric Artery Syndrome. Conclusion: This case describes an SMA syndrome presenting in a young adolescent male with no any surgical history or history of weight loss but represented with complains of upper GI Obstruction representing a rare, but important differential for upper gastrointestinal obstruction.***

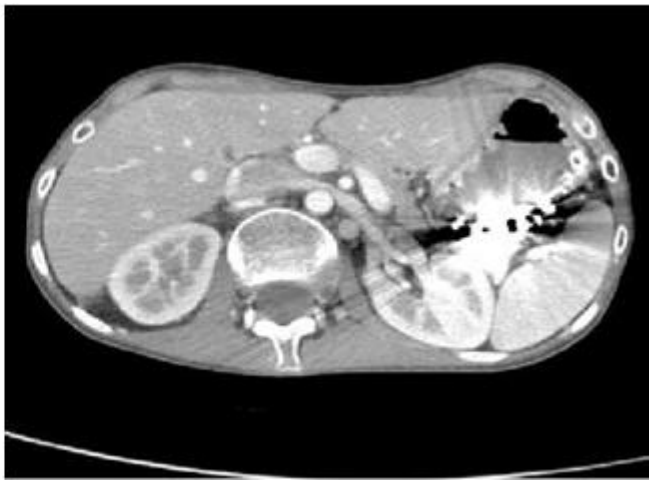
Keywords: SMA syndrome, young adolescent male, no any past history

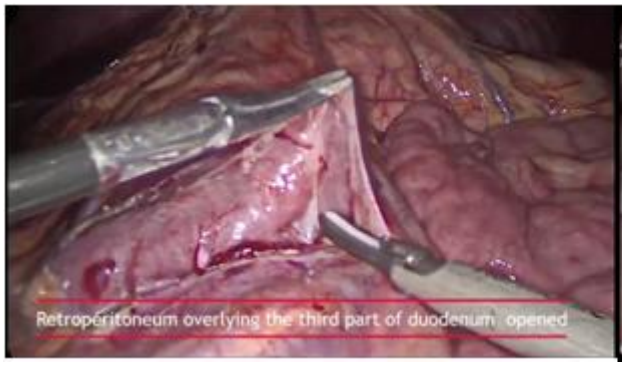
1. Introduction

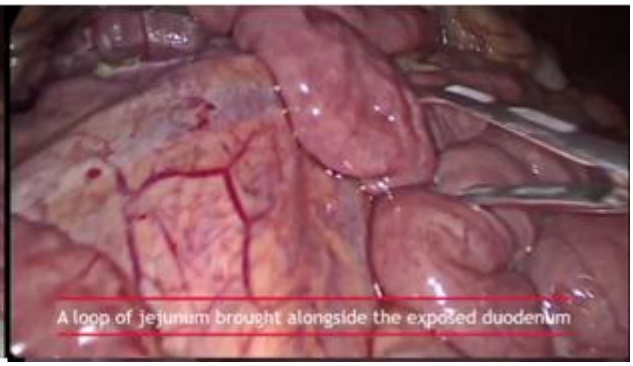
Superior mesenteric artery (SMA) syndrome is a rare cause of upper gastrointestinal obstruction.1 It was first described by Von Rokitansky in 1842 and popularised later by Wilkie. It is also known as SMA syndrome, cast syndrome and arteriomesenteric duodenal compression.2 SMA syndrome is a rare entity in which the third part of duodenum is compressed by the SMA, causing acute or chronic duodenal obstruction. It is seen in patients with rapid weight loss, those in plaster body casts, hip spica casts, or in traumatic quadriplegias, in which there may be sudden loss of weight and patient may be positioned supine for prolonged periods.

2. Case Report

A 18-year-old male patient presented to the PDU civil hospital Rajkot complaints of abdominal pain, nausea and occasional vomiting since 7 days. The vomiting was aggravated after each meal. The patient had no significant surgical history. An abdominal examination revealed upper abdominal tenderness and distention. On performing a physical examination, epigastric region was tender to palpate. Contrast-enhanced abdominal computed tomography (CT) demonstrated stomach, 1st, 2nd and proximal 3rd part of duodenum appears dilated. Decrease in aortomesentric distance which measures approximately 3.4mm causing indentation over mid 3rd part of duodenum.; aortomesentric angle measures approximately 41° appears to be normal P/O Superior Mesentenic Artery Syndrome likely. Nasogastric tube was placed for decompression. Fluid resuscitation was given through parentral route. Patient was managed conservatively initially, surgical intervention done after failure of response to conservative management. Patient posted for surgery and undergone Laparoscopic Duodenojejunostomy with drain placement at anastomosis site. Nasogastric tube removed on Post operative Day-4 and drain removed on Post Operative Day-7. Patient got discharged on Post Opeartive Day-13 and came for regular follow-ups in OPD with no any fresh complains.







3. Discussion

Superior mesenteric artery syndrome is a rare condition. Only 400 cases have been reported so far. The Superior Mesenteric Artery usually forms an angle of approx.45°with the abdominal aorta at its origin, while the crossing of the third part of the duodenum as it passes between the SMA and aorta, resulting in the Superior Mesenteric Artery Syndrome. It is characterized by features of in between the SMA anteriorly and aorta posteriorly. Any factor that sharply narrows this aortomesentric angle (to less than 25°approx.) can cause entrapment and cause acute or chronic upper gastro-intestinal tract obstruction, and, although the exact aetiology is not known, the syndrome has been associated with sudden weight loss, spinal surgery, cast application, and, rarely, abdominal aortic aneurysm and pan-creatitis6. Alternatively other causes implicated include high insertion of duodenum at the Ligament of Treitz, a low

origin of SMA and compression of duodenum due to peritoneal adhesions.5 It usually affects young females (10 to 39 years). The symptomatology is commonly chronic, with epigastric pain, bloating after meals, and vomitting. An acute presentation is uncommon.6 The most helpful pathognomonic sign is a line of obstruction in the third part of the duodenum passing obliquely towards the right lower quadrant corresponding to the course of the superior mesentenic vessels. The obstruction may be total in acute forms. In less complete obstruction, other changes have to be carefully looked for. The obstructions are usually not total and diagnosis is more difficult. The radiologist's role in these cases is to establish a diagnosis and help plan management by determining the value of positional changes, and to follow the role of conservative and operative management.7 Thus, the findings of SMA syndrome in upper GI study are very important. It reveals the characteristic dilatation of the first and second parts of the duodenum, with an abrupt vertical or linear cutoff in the third part with normal mucosal folds. Very little barium is seen to pass into jejunum during the early part of the examination. And, other finding includes delay of 4-6 hours in gastroduodenojejunal transit.8 Unfortunately, these Conservative management is the rule for acute cases.4 Conservative management, consisting of frequent and small feedings has been successful at times and should be tried initially; particularly in late cases.8 Surgery is indicated for chronic cases and failure of conservative management. Duodenojejunostomy is the procedure of choice and is effective in 90% of patients.4 Cleavage of the ligament of Treitz is another option, enabling the duodenum to drop away from the apex of the sharpened aorto-mesenteric angle.10 Laparoscopic duodenojejunostomy for the management of SMA has also been described in the literature.8

4. Conclusion

This case describes an SMA syndrome presenting in a young adolescent male with no any surgical history or history of weight loss but represented with complains of upper GI Obstruction representing a rare, but important differential for upper gastrointestinal obstruction.

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