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Original Research Paper

SMA SYNDROME-vascular compression of the duodenum CASE DISCUSSION & LITERATURE REVIEW

Surgery

KEYWORDS: - -SMA syndrome,Duodenojejunostomy

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ABSTRACT

Introduction:The SMA syndrome is a rare acquired vascular compression disorder in which acute angulation of SMA results in compression of third part of the duodenum leading to obstruction. The principal symptoms are upper abdominal distension, vomiting and epigastric pain. In this case report, we describe this syndrome in a young girl. Case presentation:We report a 16-year-old girl who presented with upper abdominal distension, vomiting with loss of weight. A diagnosis of SMA syndrome was made on CT scan abdomen and she went on to have a laparotomy, where a dilated stomach n duodenum proximal to origin of SMA. Duodenojejunostomy was performed in the patient .Conclusion:The SMA syndrome is rare but should be taken into consideration in investigating cases of thin built female patients with a history of abdominal distension, vomiting, rapid weight loss and anemia. Diagnostic workup should include upper digestive tract endoscopy ,barium , ultrasonography and abdominal tomography. Treatment is surgical in most cases. Complications resulting from chronic malnutrition and electrolyte imbalance may occur but death is rare.

INTRODUCTION

Superior mesenteric artery (SMA) syndrome is a rare cause of upper gastrointestinal obstruction. It was first described by von rokitansky in 1942 and popularized later by Wilkie. It is also known as cast syndrome, wilkie syndrome and arteriomesenteric duodenal compression.

The SMA syndrome is a rare acquired vascular compression disorder in which acute angulation of SMA results in compression of third part of the duodenum leading to 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.

Patients are typically young ,and predominantly female .It is associated with anorexia nervosa, severe combat injury leading to prolong bedridden status and major burns.In early stages it is very difficult to diagnose because of it's vague symptoms strong suspicion & elicitation of rapid weight loss or prolonged immobilization history is key for it's diagnosis. The principal symptoms are upper abdominal distension, vomiting and epigastric pain.

DISCUSSION:

Superior mesenteric artery usually forms an angle of approx. 42 to 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.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. The most helpful x-ray 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 mesenteric vessels. Conservative management, consisting of frequent and small feedings has been successful at times and should be tried initially. Duodenojejunostomy is the procedure of choice and is effective in 90% of patients. cleavage of the ligament of treitz is another option, enabling the duodenum to drop away from the apex of the sharpened aorto-mesenteric angle.

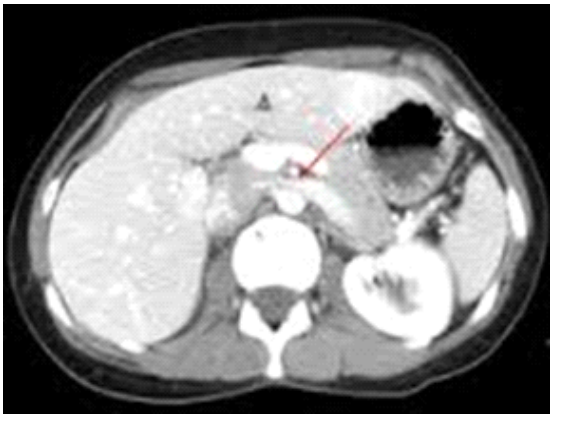

Figure 1: ct image of SMA syndrome

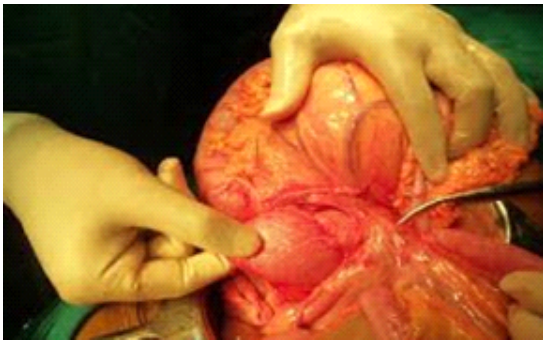

Figure 2: intraop image of SMA syndrome

CASE STUDY

A 16 year female patient presented with acute abdominal distention ,epigastric pain, post prandial emesis, anorexia, loss of weight & early satiety. For which she undergone exploratory laparotomy at Indore by right paramedian approch.Patient referred to CHA .

Physical examination :grossly distended abdomen ,non –tender, with suture in situ. History elicited from her mother s/o loss of weight within 3 months. USG s/o limited evaluation due to excessive gaseous abdomen.

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CECT abdomen revealed grossly distended stomach and duodenum up to proximal 3rd part of duodenum with acute aortomesenteric angle of 16 degrees.

Surgical procedure: An open laparotomy was performed using right paramedian incision.Intra operatively stomach and proximal 3rd part of duodenum are dilated which confirmed by insufflation of 150 to 300 ml of air through nasogastric tube.An retro colic, side to side duodenojejunostomy done.2 drain were kept and abdomen closed in layers.

Results: the post operative period was uneventful. The patient recovered well except a minor surgical site infection.
Follow up: the patient is on follow up for a period of 5 months . during this period the patient regained her lost weight & all her nutritional parameters were improved

CONCLUSIONS

SMA syndrome is rare vascular compression of third part of duodenum. It is almost always a disease of second to third decade occurring most commonly in young female.
Duodenojejunostomy remains the gold standard therapy for SMA syndrome..

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