CASE REPORT

Hypertrophy of Ligament of Treitz

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Abstract:

Congenital duodenal obstruction commonly occurs due to malrotation, atresia, stenosis and annular pancreas in decreasing order of frequency. This is a case report of a 12 year old male child who presented with complaints of non-projectile vomiting and abdominal distension and pain after meals since 7 years. Barium study showed narrowing of the Duodeno-jejunal(DJ) junction due to hypertrophied ligament of Treitz. Exploratory laparotomy revealed a dilated stomach and collapsed bowel loops. There were adhesions at DJ junction and other parts of the small intestine. Adhesiolysis was done. The follow-up revealed a weight gain of 2 kg. The barium study was repeated which also revealed a normal study. Congenital obstruction of duodeno-jejunal junction due to extrinsic band or due to narrower attachment of ligament of Treitz at duodeno-jejunal flexure is a rare cause of bilious vomiting in the newborn period. A broad attachment of the ligament of Treitz makes a smooth obtuse angle at the duodeno-jejunum junction whereas a narrower insertion creates an acute angle that predisposes to obstruction.Duodenal obstruction may rarely occur in the presence of a normally rotated gut.

Keywords: Duodenal Obstruction, Suspensory Muscle of Duodenum, Attachment, Adhesiolysis.

Introduction:

Congenital duodenal obstruction commonly occurs due to malrotation, atresia, stenosis and annular pancreas. Besides this, duodenal obstruction may occur due to high fixation of duodeno-jejunal junction or hyperfixation bands at duodeno-jejunal flexure [1].Whereas virtually all other ligaments and mesenteries in the abdomen have been imaged, features of the ligament of Treitz render its visualization by CT or MRI challenging [2].We are reporting a case in which duodenal obstruction occurred in the presence of normally rotated gut.

Case Report:

12 year old male child presented with complaints of vomiting, abdominal distension and pain and sense of fullness after meals since 7 years. The pain was insidious in onset, dull aching and associated with nausea and non-projectile vomiting. On physical examination, there was generalized tenderness all over the abdomen. All blood investigations were within normal limits. Barium study showed narrowing of the Duodeno-jejunal (DJ) junction due to hypertrophied ligament of Treitz (Fig. 1A). Pre-operative ultrasonography of abdomen-pelvis showed evidence of excessive bowel gas all over abdomen. Endoscopy revealed hugely distended

D_1, D_2 and D_3. Scope was negotiated above the DJ flexure. Extrinsic compression of the DJ flexure was evident. Exploratory laparotomy revealed a dilated stomach and collapsed bowel loops, with adhesions at DJ junction and other parts of the small intestine (Fig.2). Adhesiolysis was done. Patient was started on liquid diet from third post-operative day and feeds were increased gradually. Patient was called for follow up after 1 month. Weight gain of 2 kg was recorded. Barium study was repeated which revealed a normal study (Fig.1B).

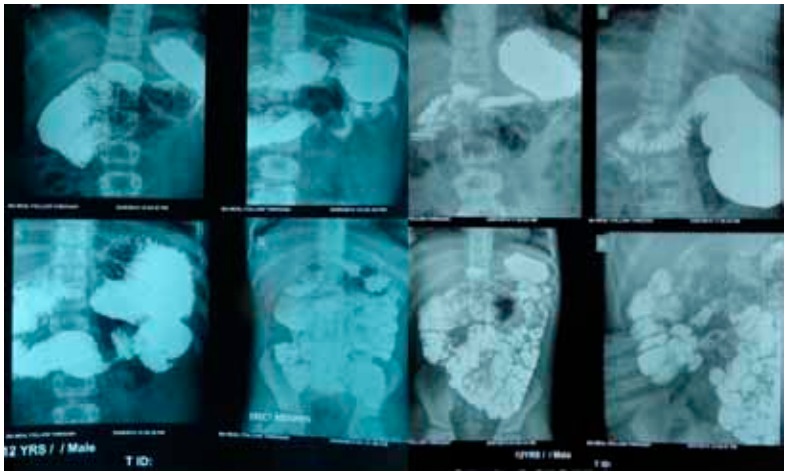

Fig. 1 (A) Barium Study (Preoperative) (B) Barium Study (Postoperative)

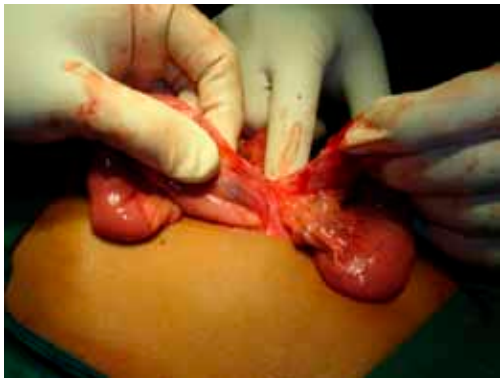

Fig. 2 Intra-operative Findings (Hypertrophied Band)

Discussion:

Wenzel Treitz, an Austrian Physician and Professor of Anatomy and Pathology in Krakow and Prague, described in 1853 a thin triangular muscle springing with a broad base from the upper edge of duodeno-jejunal flexure. In the medical literature, the ligament of Treitz is frequently used as a term to designate the duodeno-jejunal flexure, but the attributes of the structure itself are not generally known. Indeed, anatomists describe it as the suspensory muscle

of the duodenum, arising from the connective tissue around the stems of the celiac and superior mesenteric arteries and inserting as non-striated muscle commonly into the third and fourth portions of the duodenum and frequently into the duodeno-jejunal flexure as well [2].

Congenital obstruction of duodeno-jejunal junction due to extrinsic band or due to narrower attachment of ligament of Treitz at duodeno-jejunal flexure is a rare cause of bilious vomiting in the newborn period [3]. Louw suggested that such cases in which the duodenum shows evidence of dilatation and hypertrophy with no evidence of malrotation should be labeled as "congenital megaduodenum". The angulation at the duodeno-jejunal flexure by narrow attachment of ligament of Treitz is responsible for the condition, and this is cured by freeing the duodeno-jejunal junction [4].

Ligament of Treitz which is also known as suspensory muscleof the duodenum takes origin from the right crus of the diaphragm and from the dense fibrous tissue around the celiac artery. From this origin it extends downwards behind the pancreas, the splenic vein and in front of the left renal vein to be inserted into the duodenum. A broad attachment of the ligament of Treitz makes a smooth obtuse angle at the duodeno-jejunum, whereas a narrower insertion creates an acute angle that predisposes to obstruction [2].

Haley and co-workers detailed the anatomic description of the ligament of Treitz, studying its method of attachment to the bowel [5]. Congenital extrinsic duodeno-jejunal obstruction should be clearly separated from incomplete mid-gut rotation. In the later entity, the duodenum does not cross the midline behind the superior mesenteric vessels and the duodenum is generally obstructed in its second or third part by extrinsic adhesions running from the right posterior parieties to the high riding cecum. In distinction, the duodenum is normally rotated in the congenital extrinsic obstruction of the duodeno-jejunal junction [6].

Conclusion:

Duodenal obstruction may rarely occur in the presence of a normally rotated gut. A broad attachment of the ligament of Treitz makes a smooth obtuse angle at the duodeno-jejunum junction / flexure whereas a narrower insertion creates an acute angle that predisposes to obstruction. Hypertrophy of Ligament of Treitz could also contribute to a presentation of superior mesenteric artery syndrome.

References

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