CASE REPORT OPEN ACCESS

Duodenal Tuberculous Stricture With Multiple Jejunal and Ileal Strictures: A Rare Cause of Intestinal Obstruction In A Child

Shumaila Israr, [1*] Jamshed Akhtar [1]

ABSTRACT

Duodenal obstruction in children usually occurs due to congenital anomalies like malrotation of the gut, congenital bands and duplication of the duodenum or may be due to acquired lesions like lymphoma. The duodenum is infrequently involved in paediatric patients due to tuberculosis especially intrinsic obstruction is extremely rare. Only few cases are reported in the literature related to intrinsic tuberculous duodenal obstruction in children. We are reporting a case of ten-year-old girl who presented with the symptoms of intestinal obstruction. Diagnosis of intrinsic tuberculous duodenal stricture along with multiple jejunal strictures was made at surgical exploration.

Key words *Abdominal tuberculosis, Duodenal obstruction, Duodenal tuberculosis, Duodenal stricture, Child.*

INTRODUCTION:

Childhood tuberculosis is still a major public health problem in the developing countries including Pakistan. Children usually acquire infection from other family members. The extra pulmonary tuberculosis is found in11%-16% of all the patients of tuberculosis of which about 3% to 4% include abdominal tuberculosis. Ileocecal area is the most commonly involved site due to the abundance of lymphoid tissue (Peyer's patches). Rarely tuberculosis may involve stomach, duodenum and esophagus.[1-4] In this manuscript we report a rare site and unusual presentation of tuberculosis of small bowel in a girl.

CASE REPORT:

A 10-year old female resident of lower socio-economical area of Karachi weighting 15 kg (below 5th centile), height 116 cm (between25th and 50th centile), referred from other hospital to emergency department with the complaint of colicky abdominal pain, abdominal distention, and bilious vomiting that occurred off and on for the last two months. Patient remained under treatment in the private clinics where intravenous fluids and injections were prescribed. Finally, she was referred out due to the aggravation of clinical symptoms with impression of intestinal obstruction. Past history was not significant except for failure to thrive noted over the last two years. There was no family history of tuberculosis. The girl was fully vaccinated according to the EPI schedule. BCG scar mark was also present.

On examination the girl was found emaciated, with pallor. The vitals were heart rate 120 beats /min, respiratory rate 28 breath/min, temperature of 99^{o} F. The already placed nasogastric tube showed bilious aspirate. Chest examination was unremarkable. Abdomen was distended with visible peristalsis from left to right without any tenderness. The initial impression was duodenal obstruction secondary to intraluminal web or congenital bands. The blood investigations were almost in the normal range with hemoglobin of 10 gm/dl, and serum albumin 3.1gm/dl. Supportive treatment was started with addition of peripheral line parenteral nutrition. CT scan abdomen with contrast showed hugely dilated stomach and duodenal loops (Fig-I and II).

Laparotomy was done after stabilization through right supra umbilical transverse incision. On opening the abdomen, hugely dilated stomach and duodenum up to its 3rd part was found. Multiple strictures were also noted in the small bowel including jejunum and ileum (Fig-III). Enlarged mesenteric lymph nodes

[1]. Department of Paediatric Surgery, NICH, JSMU Karachi

Correspondence:
Dr. Shumaila Israr [1*]
Department of Paediatric Surgery
National Institute of Child Health
Jinnah Sindh Medical University
Karachi
E-mail: shumaila.pk_mbbs@yahoo.com

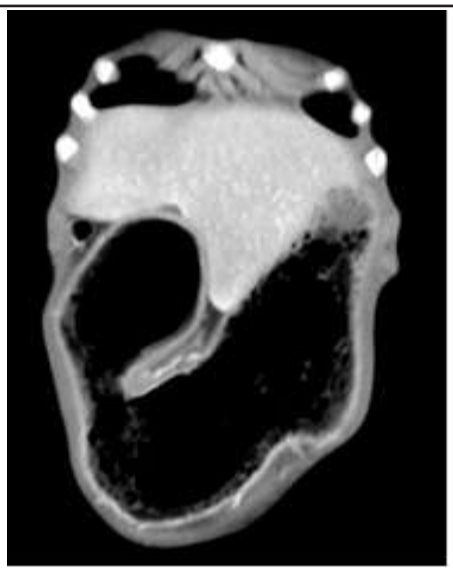

Fig. I: CT scan, showing dilated stomach and duodenal loops.

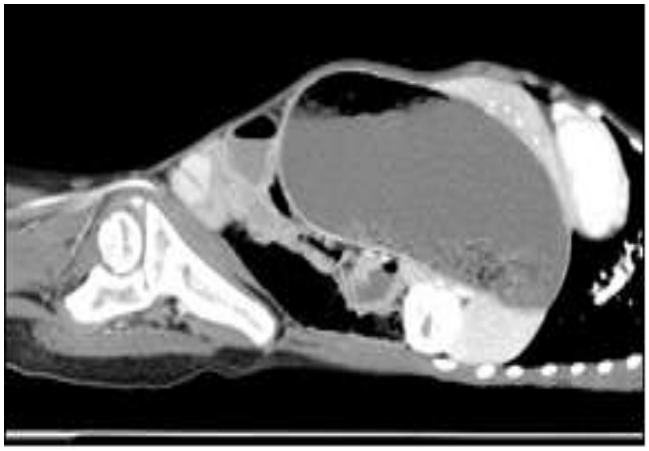

Fig II: CT scan, showing dilated stomach reaching up to the pelvis

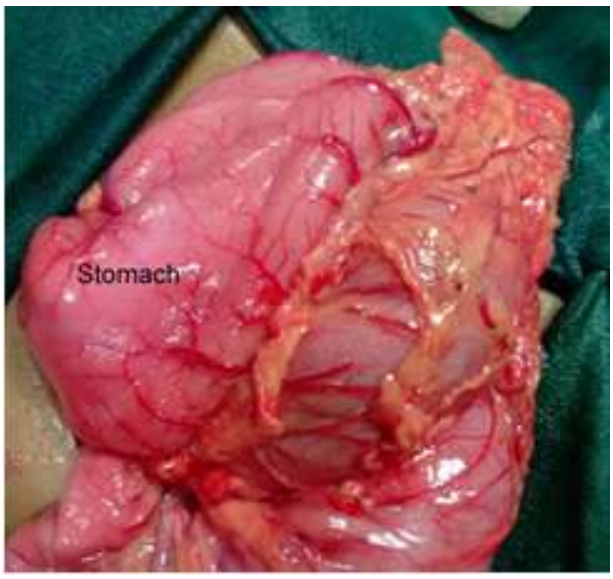

Fig III: Hugely dilated stomach and duodenum till its 3rd part

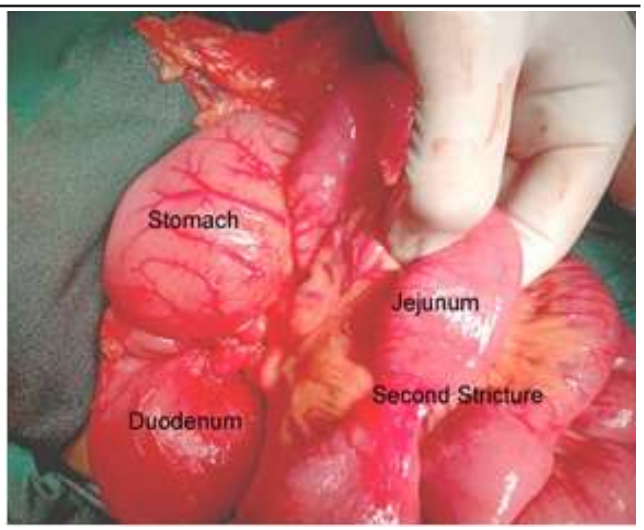

Fig IV: Enlarged mesenteric lymph nodes. First stricture at 3rd part of the duodenum causing almost complete obstruction and jejunal strictures.

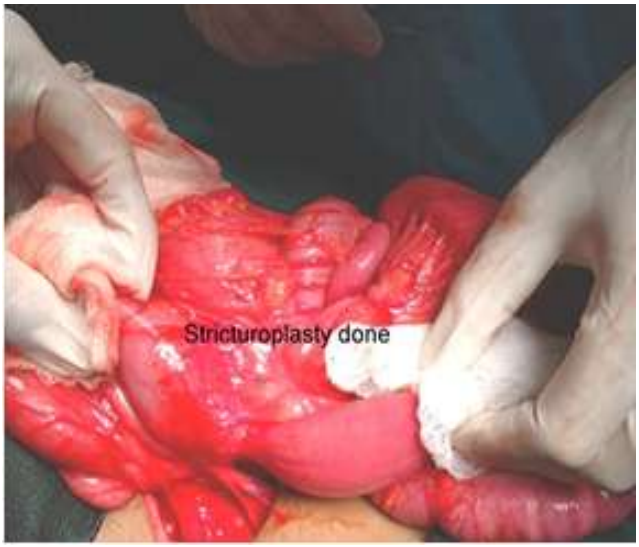

Fig V. Jejunal stricture after stricturoplasty.

were also present. First stricture at the 3rd part of duodenum was causing almost complete obstruction. This was dealt with side to side duodeno-duodenal anastomosis (Fig-IV). Distal to this, two more strictures in proximal jejunum causing partial obstruction were found and stricturoplasty done (Fig-V). Three subsequent narrowing not causing obstruction in jejunum and ileum were left as such. Mesenteric lymph nodes biopsy was taken. The findings raised the suspicion of tuberculosis. Postoperative recovery was smooth. Anti-tuberculous therapy was started after receiving histopathology report which showed congestion, inflammatory infiltrates, edema, dense fibrosis and inflammation. Lymph node had multiple granuloma with Langerhans type giant cells and caseous necrosis. At follow up general condition of the patient improved with weight gain of 7 kg in 45 days. Family screening was also advised.

DISCUSSIONS:

Abdominal tuberculosis is 6th most common site of extra pulmonary tuberculosis. It is less common in children.[1] The ileocecal region is most commonly involved.[2] Duodenum is a rare site to be involved with tuberculosis. The largest published series of duodenal tuberculosis reported 30 cases from India involving adult population.[3] Third part of the duodenum was the most commonly affected site. Duodenal obstruction may result from within or due to extrinsic compression by enlarged periduodenal lymph nodes.[2] Duodenal obstruction in children usually occurs due to congenital anomalies. However, it is an infrequent site to get involved in tuberculosis as noted in our patient.[4]

The clinical manifestations of duodenal tuberculosis are varied and non-specific. A high index of suspicion is needed for making a preoperative diagnosis. The causative agent. The mycobacterium tuberculosis which is an acid fast bacillus, is rarely isolated in such cases. The diagnosis of abdominal tuberculosis is usually made on the histological evidence of tuberculosis with caseation necrosis. Lingenfelser et al suggested to include clinical manifestations as suggestive of tuberculosis, imaging support with histopathological or microbiological evidence and/or therapeutic response to treatment as criteria for diagnosing the disease.[5] The Gene Xpert MTB RIF assay is another laboratory test used for the diagnosis.[2]

Laparoscopy and biopsy can help in making a diagnosis as reported in a series of 35 children from Turkey.[6] In our case laparoscopy was not done as patient had intestinal obstruction with massive abdominal distension. In index case pulmonary involvement was also not found. However, this has been reported in approximately 50% of patients with abdominal tuberculosis.[1] Barium studies can demonstrate site of narrowing either extrinsic or intrinsic type.[7] Superior mesenteric artery syndrome was one of the differential diagnosis with which patient was referred to us. In this condition third part of the duodenum is compressed. Laparotomy and histological examinations of the lymph nodes are necessary for a definitive diagnosis as noted in our study.[3]

Therapy with standard antituberculous drugs is usually highly effective for intestinal tuberculosis. Surgery is usually reserved for patients who have developed complications, including intestinal obstruction and perforation. Obstruction is the most common complication in patients with tuberculosis. Patients with multiple and long strictures are less likely to respond to medical therapy. However, in some patients, intestinal obstruction may manifest as a result of cicatrization after starting antituberculous treatment.[8] The surgical resection should be conservative as done in our patient. Multiple small bowel strictures may be treated by stricturoplasty to preserve bowel length as done in the index case.[9]

CONCLUSION:

Duodenal tuberculosis is a rare and difficult to diagnose preoperatively in children. A high index of suspicion is required especially in geographical locations where tuberculosis is not uncommon.

REFERENCES:

1. Gupta R, Kumar A, Kumar B, Sinha N, Anand A. Obstructing jejunal stricture from tuberculosis, J Pediatr Surg Case Rep. 2018;35:42-4. https://doi.org/10.1016/j.epsc.2018.05.014

2. Rathi P, Gambhire P. Abdominal Tuberculosis. J Assoc Physicians India. 2016;64:38-47.

3. Gupta SK, Jain AK, Gupta JP, Agrawal AK, Berry K. Duodenal tuberculosis. Clin Radiol. 1988 ;39:159-61. doi: 10.1016/s0009-9260(88)80016-3.

4. Misra S, Kumar P, Mehta S, Yachha SK, Malik AK, Nagi B, Rao KL. Tubercular stricture of the duodenum in a child. J Paediatr Child Health. 1992 Aug;28(4):338. doi: 10.1111/j.1440-1754.1992.tb02684.x.

5. Lingenfelser T, Zak J, Marks IN, Steyn E, Halkett J, Price SK. Abdominal tuberculosis: still a potentially lethal disease. Am J Gastroenterol. 1993;88:744-50.

6. Kýlýç Ö, Somer A, Hançerli Törün S, Keser Emiroðlu M, Salman N, Salman T, et al. Assessment of 35 children with abdominal tuberculosis. Turk J Gastroenterol. 2015;26:128-32. doi: 10.5152/tjg.2015.6123.

7. Ha HK, Ko GY, Yu ES, Yoon K, Hong WS, Kim HR, et al. Intestinal tuberculosis with abdominal complications: radiologic and pathologic features. Abdom Imaging. 1999;24(:32-8. doi: 10.1007/s002619900436.

8. Memon M, Sangrasi AK, Ahuja P, Tahir SM, Munir A, Shaikh N. Efficacy of strictureplasty in tuberculous strictures of small intestine. Pak J Med Sci. 2011;27:138-41.

9. Debi U, Ravisankar V, Prasad KK, Sinha SK, Sharma AK. Abdominal tuberculosis of the gastrointestinal tract: Revisited. World J Gastroenterol 2014;20:14831-40. DOI: http://dx.doi.org/10.3748/wjg.v20.i40.14831

10. Al-Hilou H, Carroll N, Jah A, Davies S, Parkes M. A rare cause of duodenal stricture. BMJ Case Rep. 2011;10.1136/-bcr.10.2010.3379.

Received for publication: 21-08-2021

Accepted after revision: 10-09-2022

Author's Contributions:

Shumaila Israr: Concept, literature review, manuscript writing.

Jamshed Akhtar: Concept, literature search, manuscript editing.

Both authors approved final draft of the manuscript.

Ethical statement: Institution review board permission was obtained prior to the study and informed consent taken.

Ethical statement / consent of the patient**:** The consent was taken from the parents to report this case for educational purpose. Confidentiality was maintained while preparing the manuscript.

Competing Interest: The authors declare that they have no competing interest.

Source of Funding: None

How to cite this article:

Israr S, Akhtar J. Duodenal tuberculous stricture with multiple jejunaland ileal strictures: a rare cause of intestinal obstruction in a child. J Surg Pakistan. 2022;26. J Surg Pakistan. 2022;27 (4):139-42. Doi:10.21699/jsp.27.4.7.