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DUODENAL WEB WITH LATE PRESENTATION AND FOREIGN BODY INSIDE, A CASE REPORT WITH LITERATURE REVIEW

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ABSTRACT
A duodenal web is a congenital abnormality, which involves the presence of a thin, membranous tissue partially obstructing or narrowing the lumen of the duodenum. This report talks about a rare case of duodenal web of late presentation at 2 years of age. It was associated with Down syndrome and congenital hypothyroidism and there were foreign bodies found inside the duodenum. The patient was presented with intolerance to fluids and nutrition for investigation.

KEYWORDS: foreign body; duodenal web; duodenal obstruction; duodenal atresia.

INTRODUCTION
Mucosal diaphragm or duodenal webs are membranous duodenal obstructions. They have been reported to have an overall incidence occurring between 1 in every 4000 to 15000 births with almost all cases presenting at birth.[1,2] The obstruction in duodenal webs is typically found in the second segment of the duodenum, close to the ampulla of vater.[3] This is due to the inability of the duodenum to recanalize during the 6th to 8th weeks of gestation.[4] Congenital duodenal obstructions are categorized by Gray and Skandalakis into three classifications: Type I, Type II, and Type III, with duodenal webs being classified as the first type.[1] They usually present immediately after birth and diagnosing cases beyond the neonatal stage may pose a challenge if there was no strong sense of suspicion.[4] However, our case report presented later with a picture of failure to thrive and vomitin.[5, 6]

Case Presentation
A 2-year-old male of Mediterranean descent, with a history of normal vaginal delivery with NICU admission as a case of Down syndrome and congenital hypothyroidism, with no family history of similar condition, at 6 months, started recurring to the Emergency department multiple times as a case of early satiety, abdominal pain and bilious vomiting which was relieved by simple intravenous fluids and bowel rest. Finally, at 2 years of age, he was admitted to a peripheral hospital as a case of intolerance to fluids and meals. He had multiple visits to the gastroenterologists as his mother reported ingestion of multiple foreign bodies which were extracted 3 times by endoscopy, Figure (1). The patient was referred to the gastroenterologist and pediatric surgery team at Queen Rania Al Abdullah Tertiary Hospital for pediatrics, for further investigations. At arrival, the patient was looking ill, pale, and small for his age according to the growth chart (growth chart). His mother reported that he had early satiety and no appetite, followed by recurrent vomiting since birth. A full chemistry panel with liver function tests was done, and all showed normal results. Thyroid levels were insignificant as he is on thyroxine therapy. When an upper endoscopy was done, it showed a normal esophagus and full stomach, but the pylorus could not be visualized which was an incentive for a barium meal. This revealed the presence of significant dilatation of D1, and D2 with tertiary contraction. Moreover, the contrast did not pass to the third part implying a complete obstruction. Figure (2). After resuscitation and blood transfusion, the patient underwent an exploration laparotomy. Through a right transverse supraumbilical incision. Intraoperative findings confirmed that the patient has a duodenal web at the level of D2, D3. Figure (3, 4). Excision of the web using a strictureplasty technique was done, and intraoperative examination for other causes was undertaken, which revealed the presence of a foreign body which was a Plastic sheet, Figure (5), illustrating the cause of the obstruction. The post-op course was unremarkable as the nasogastric tube was removed on the first-day post-op, and the patient started oral feeding afterward with no complaint. On the 4th-day post-op, he was discharged home. Three weeks

later, the patient was presented with good health and weight gain together with normal hemoglobin reading.

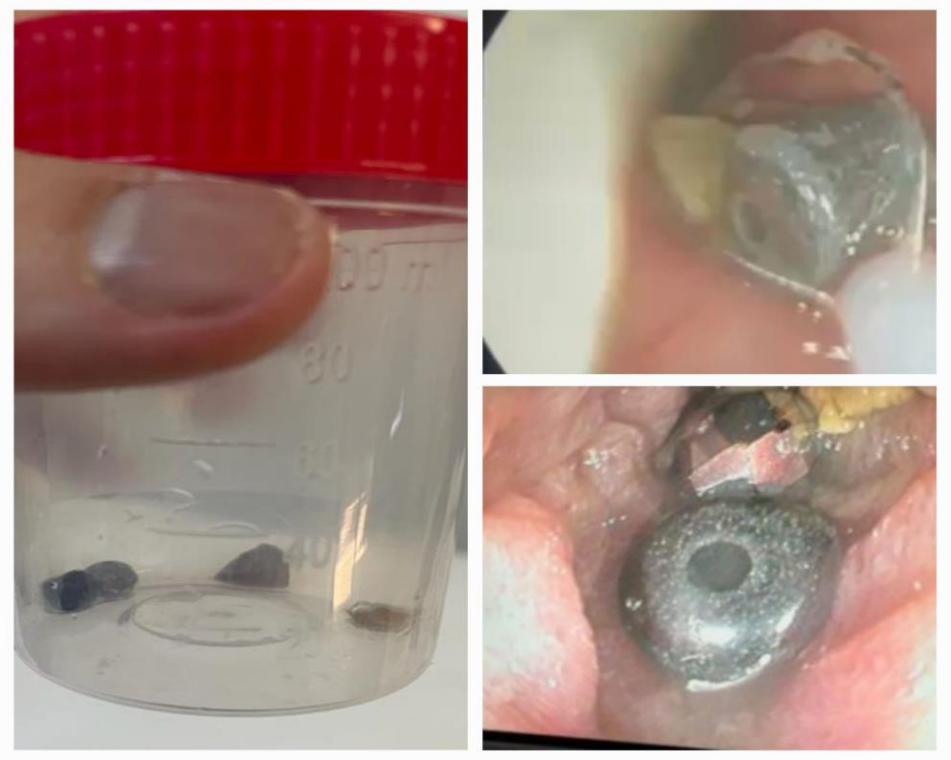

Figure (1)

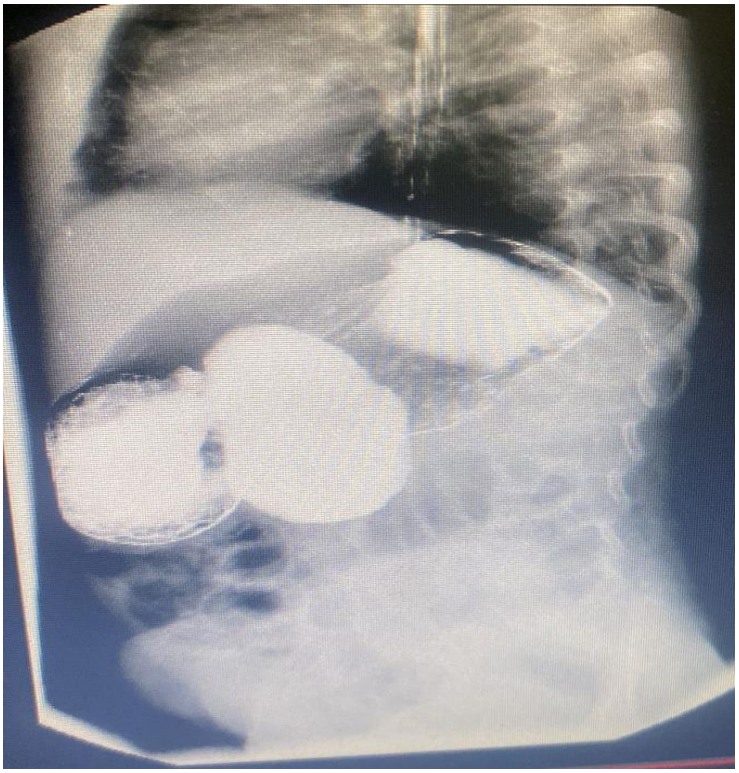

Figure (2)

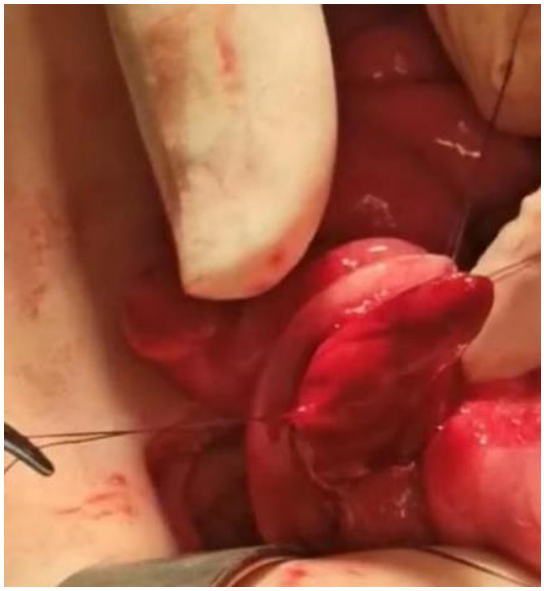
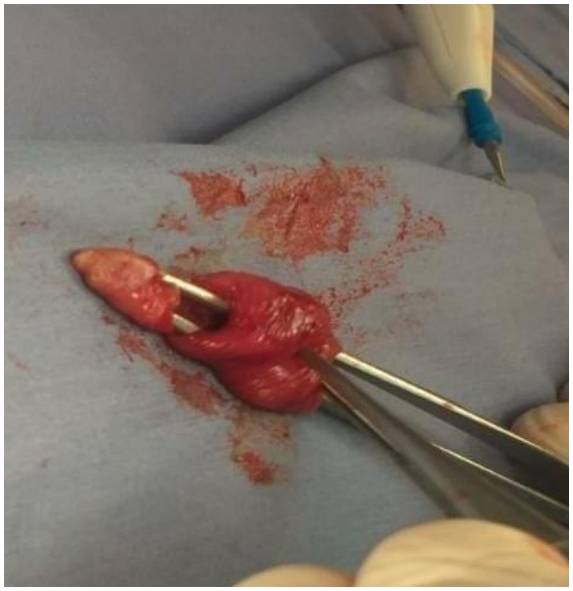

Figure (3,4)

Figure (5)

DISCUSSION

Diagnosing duodenal webs typically occurs during early stages of life, and they are infrequent contributors to duodenal obstructions.[3] The overall incidence of congenital duodenal atresia reported as one person over 4000.[7,8] During gestation, from the fifth to the twelfth week, the duodenum undergoes a temporary closure because of the rapid proliferation of epithelial cells. Subsequently, as these epithelial cells degenerate, vacuolation takes place, leading to the recanalization of the duodenum. If there were any defects in the vacuolation process, it could result in the development of congenital atresia in the duodenal lumen.[9] Over 50% of individuals affected by this condition may exhibit concurrent congenital anomalies, including Down syndrome, annular pancreas, congenital heart disease, prematurity, developmental delay, and malrotation being some of the most frequently observed associated conditions.[10] A delayed presentation is linked to clinical features that are less specific, such as poor growth, gastroesophageal reflux, distension in the upper abdomen, and recurrent episodes of pulmonary aspiration.[11] Alternatively, due to the associated cognitive delays, recurrent vomiting might be overlooked or disregarded.[12] Raed Al Ghannam presented a case of a three and a half year old male patient presenting with similar symptoms to the case above. An Xray revealed 2 foreign bodies but showed no improvement over time. After many investigations with normal results, an explorative operation revealed the presence of a web in the duodenum which was excised and the foreign bodies were retrieved. However, reconstruction of the ampulla of vater was also required due to its presence at the insertion of the web in the duodenal wall.[4] Aditya P. Singh reported another case of a 14 month old male child with the same complaints. The patient was diagnosed with duodenal web by upper GI endoscopies and an exploratory laparotomy, which also revealed malrotation of the gut. The web was completely excised and a lads procedure and appendectomy were also done.[13] Worth

fully, the survival and outcome is extremely related to the other associated anomalies. Our patient was a 2-year-old female with Down syndrome and congenital heart disease who also happened to have ingested foreign bodies, a common incidence for patients up to 10 years of age.[12] However, her course of treatment is smooth without any documented morbidity.[14,15,16] The treatment options of duodenal atresia varies between duodeno-duodenostomy if there is complete atresia and duodenal web excision followed by duodenoplasty especially if it is close to the second part of duodenum as it will inadvertently injure the biliopancreatic tree at the level of sphincter of oddi. Our patient underwent excision of the web almost completely.[11,12,and13]

CONCLUSION

In cases of abdominal distension accompanied by bilious vomiting in children, even those who are somewhat older, suspicion of a duodenal web should be considered.[22] Even though the patient described experienced a favorable outcome, caution should be taken when deciding treatments based on individual case reports.[23]

REFERENCES

1. Sarin YK, Sharma A, Sinha S, Deshpande VP. Duodenal webs: an experience with 18 patients. J Neonatal Surg, 2012 Apr 1; 1(2): 20. PMID: 26023379; PMCID: PMC4420395.
2. Mousavi S A, Karami H, Saneian H. Congenital duodenal obstruction with delayed presentation: seven years of experience. Archives of Medical Science, 2016; 12(5): 1023-1027. doi:10.5114/aoms.2016.60045.
3. Vincent Zimmer, Christa Bergheim, Late-Presenting Duodenal Web, Clinical Gastroenterology and Hepatology, Volume 18, Issue 1, 2020, Page A35, ISSN 1542-3565, https://doi.org/10.1016/j.cgh.2018.08.072. (https://www.sciencedirect.com/science/article/pii/S1542356518309510)
4. Alghannam, Raed & Yousef, Yasmin. (2015). Delayed Presentation of a Duodenal Web. Journal of Pediatric Surgery Case Reports, 3: 530-533. 10.1016/j.epsc.2015.10.014.
5. Le Wald LT. Complete transposition of the viscera: A report of twenty-nine cases, with remark on etiology. JAMA, 1925; 84: 216–68. [Google Scholar]
6. Casey B. Genetics of human situs abnormalities. Am J Med Genet, 2001; 101: 356–8. [PubMed] [Google Scholar]
7. Bailey PV, Tracy TF, Connors RH, Jr, Monney DP, Lewis JE, Weber TR. Congenital duodenal obstruction: A 32 years review. J Pediatr Sur, 1993; 28: 92–5. [PubMed] [Google Scholar]
8. Nawaz A, Matta H, Hamchou M, Jacobez A, Trad O, Al Salem AH. Situsinversusabdominus in association with congenital duodenal obstruction: A report of two cases and review of the literature. PediatrSurg Int, 2005; 21: 589– 92. [PubMed] [Google Scholar]
9. Kim SY, Han BH, Park KY, Namgoong JM, Woo DH. Incidentally Diagnosed Duodenal Web in Infancy. J Korean Soc Radiol, 2022 May; 83(3): 724 729. https://doi.org/10.3348/jksr.2021.0047.
10. Jangid MK, Ahmad R, Pandre S. Delayed presentation of a congenital duodenal web managed successfully with incision of web. BMJ Case Rep, 2020 Dec 22; 13(12): e237307. doi: 10.1136/bcr-2020-237307. PMID: 33370983; PMCID: PMC7757442.
11. Naved K Alizai, John W.L Puntis, Mark D Stringer, Duodenal web presenting with acute pancreatitis, Journal of Pediatric Surgery, 1997; 32(8): 1255-1256, ISSN 0022-3468, https://doi.org/10.1016/S0022-3468(97)90696-5.
12. Smith, G., & Teele, R. (1980). Delayed diagnosis of duodenal obstruction in Down syndrome. American Journal of Roentgenology, 134(5): 937–940. doi:10.2214/ajr.134.5.937 10.2214/ajr.134.5.937.
13. Singh, Aditya P., et al. "Delayed presentation of the duodenal web with malrotation." Menoufia Medical Journal, 2020; 33.4: 1418.
14. Duncan ND, Trotman H, Seepersaud M, Dundas SE, Thame M, Antoine M. Obstruction of the duodenum by a preduodenal portal vein in situsinversus. West Indian Med J, 2007; 56: 285-87.
15. D souza F, Nage A, Bendre P. Preduodenal portal vein with situsinversustotalis causing duodenal obstruction. APSP J Case Rep, 2016; 7: 24.
16. Shukla RM, Mukherjee PP, Mukhopadhyay B, Mandal KC. Congenital Duodenal Obstruction with Preduodenal Portal Vein and SitusInversus Totalis: Reportof Two Cases and Literature Review. Indian J Surg, 2013; 75: S74-S76.
17. Akhtar J, Guiney EJ. Congenital duodenal obstruction. Br J Surg, 1992; 79: 133–[PubMed] [Google Scholar]
18. Adeyemi SD. Combination of annular pancreas and partial situsinversus: A multiple organ malrotation syndrome associated with duodenal obstruction. J Pediatr Surg, 1988; 23: 188–91. [PubMed] [Google Scholar]
19. Luchtman M, Golan Y, Heldenberg D, Kessler F. Situsinversusabdominus in association with duodenal obstruction and internal hernia. Am J Perinatol, 1933; 10: 255–7. [PubMed] [Google Scholar
20. Poddar U, Jain V, Yachha SK, Srivastava A. Congenital duodenal web: successful management with endoscopic dilatation. Endosc Int Open, 2016 Mar; 4(3): E238-41. doi: 10.1055/s-0041-110955. Epub 2016 Jan 19. PMID: 27004237; PMCID: PMC4798844.
21. Beeks, Angela, et al. "Endoscopic dilation and partial resection of a duodenal web in an infant." Journal of pediatric gastroenterology and nutrition, 2009; 48.3: 378-381.