

Perforated Gastric Ulcer in a 10 Years Old Girl, A Rare Diagnosis for Age: A Case Report

Ahmad Reza Shahraki*

1. General Surgeon, Assistant Professor, Department of Surgery, Zahedan Medical Faculty, Zahedan University of Medical Sciences and Health Services, Zahedan, Iran.

ABSTRACT

Perforated gastric ulcer (PGU) is exceedingly uncommon in children. In a child with acute abdomen and Pneumoperitoneum, an Appendiceal etiology is more often suspected as a likely cause. Failure or delay to diagnose a PGU can result in significant morbidity and even mortality.

We report a 10 years old girl with abdominal pain for 2 days with PGU. We did examination and we found generalized abdominal pain and performed Laparotomy and we found perforated gastric ulcer and repair with Omental patch. PGU is an uncommon cause of peritonitis in children and poses significant challenges in management. Strong suspicion and prompt appropriate intervention is necessary to avoid untoward outcomes. Researchers conclude that GOO secondary to ulceration can occur in the absence of H. pylori infection. PPU is a rare cause of abdominal pain in children, but still a PUD complication that requires surgery. PPU should be included in the differential diagnosis in patients presenting with acute abdominal pain of uncertain etiology and pneumoperitoneum. Laparoscopy is both diagnostic and therapeutic. Laparoscopic omental patch repair is a safe and effective treatment for PPU. This case illustrate that perforated peptic ulcers should be considered in children presenting with acute abdomen.

ARTICLE INFO

Date Submitted: 30 December, 2023

Date Accepted: 3 September, 2023

KEYWORDS

Pediatric peptic ulcer disease;
Pediatric Gastric perforation;
Emergency surgery; Acute abdomen

*CORRESPONDING AUTHOR

Ahmad Reza Shahraki

Email: a.r_sh@yahoo.com

INTRODUCTION

Peptic ulcer disease (PUD) in children is unusual. Existing literature reporting a prevalence of 8.1% from Europe and incidence of 1.55 annual cases from India makes it an uncommon diagnosis (1,2). Furthermore, even rarer are the complications of PUD such as perforation and hemorrhage. Radiological Pneumoperitoneum with peritoneal signs in a child should arouse a suspicion of PGU even though appendicitis is considered the commonest cause of surgical abdomen in children (3). The aim of this case presentation is the perforated peptic ulcer is rare but can happen in children and illustrate that perforated peptic ulcers should be considered in children presenting with acute abdomen.

CASE PRESENTATION

My case was a 10 years old girl with severe abdominal pain for 2 days before and admitted in surgical emergency part. At first she was ill and toxic, tachycardia about 130/min and blood pressure was 90 / 60. In first step we hydrated patient, to stable her and then performed upright chest x-ray graphs and we saw the air below the liver bare area, and we scheduled emergent surgery for her. We did laparotomy because we did not have enough time to perform laparoscopy and in another way place of ulcer are undiscovered for our team. We start surgery with a Midline classic Laparotomy and at this time we find this figure:



Please Cite This Paper As:

Shahraki AR. Perforated Gastric Ulcer in a 10 Years Old Girl, A Rare Diagnosis for Age: A Case Report. Sch Med Stud J. 2023;5:e44015.

Open Access Policy: This article is distributed under the terms of the Creative Commons Attribution-Noncommercial 4.0 International License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source and is not used for commercial purposes.





FIGURE 1. Perforated gastric ulcer

We washed a lot abdomen because of debris and clean around the ulcer, and get a lot sample of pathology according the data's



FIGURE 2. Perforated gastric ulcer

After that we repair the ulcer and we use omental patch, and after GI rest, we start eating fluids for patient and after rehabilitation successfully. We discharge her healthy with PPIs and following the pathological specimens.

CONCLUSION

PUD is an uncommon diagnosis in children with its complicated presentations being further rare. When a child with acute abdomen is met with free intraabdominal air on radiographs, PGU should be ruled out as a possibility. Timely surgical intervention preceded by clinical suspicion is necessary to treat PGU and avoid the dreaded complications. Pneumoperitoneum and peritonitis following the perforation of a peptic ulcer is a rare cause of an acute abdomen in children and often results in a significant delay in diagnosis and subsequent operative management. This increases the likelihood of developing complications post-operatively (4, 5).

In the case we described, the underlying etiology was most likely related to *H. pylori* infection based on appearance of the stomach on endoscopy and positive serum IgG. Other described instances of perforation in Western countries implicate chronic steroid administration, NSAIDs, severe underlying illness, trauma, iatrogenic perforations from EGD, and air enemas in the radiologic reduction of intussusceptions (6, 7, 8, 9, 10). The prevalence of *H. pylori* infection has declined in the United States and Europe. Despite this, the prevalence remains high in Asia and the developing world. Transmission is thought to occur most frequently from person-to-person, and children are believed most commonly to acquire infection from their mothers. Most published studies demonstrate household crowding, sharing a bed with children, and sharing plates, spoons, or tasting food before feeding a child are related to infection in children (9, 11).

This case represents a rare entity in pediatric emergency medicine. The incidence of perforated peptic ulcer in children has been decreasing in industrialized countries. Peptic ulcer disease secondary to *H. pylori* infection is particularly important to recognize due to the high reported incidence of recurrence. Perforation from peptic ulcer disease is adequately treated with primary closure, omental buttress, and medical management of the underlying etiology (12). Short term NSAIDs use in appropriate doses, commonly prescribed to control fever in children, can lead to PUD. Before administration, risk factors such as other antipyretic medication use or a suggestive familial history must be considered (13). We conclude that GOO secondary to ulceration can occur in the absence of *H. pylori* infection (14). GOO secondary to PUD may occur in the absence of *Helicobacter pylori* infection (HPI) (15). A perforated gastroduodenal ulcer is rarely observed in children. Certain medications have been reported to cause ulcerations. Deferasirox, an iron chelating agent, has been previously reported to be associated with the development of gastroduodenal ulcers (16). PPU is a rare cause of abdominal

pain in children, but still a PUD complication that requires surgery. PPU should be included in the differential diagnosis in patients presenting with acute abdominal pain of uncertain etiology and pneumoperitoneum. Laparoscopy is both diagnostic and therapeutic. Laparoscopic omental patch repair is a safe and effective treatment for PPU (17). PUD is a rare disorder in childhood. There is no difference between *H. pylori* related PUD and the others for clinical presentation, anemia or location of PU. For the discrimination of two groups, biopsy should be taken in all patients (18).

Pediatric acute abdomen, often limited by difficulties in history taking and nonspecific findings on physical examination, poses a significant challenge to the clinician (19). This case illustrates that perforated peptic ulcers should be considered in children presenting with acute abdomen (20).

ETHICAL APPROVAL and CONSENT to PARTICIPATE

The content of this manuscript are in accordance with the declaration of Helsinki for Ethics. No committee approval was required. Oral and written consent to participate was granted by her husband.

CONSENT FOR PUBLICATION

“Written informed consent was obtained from the patient's legal guardian for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.”

AVAILABILITY OF SUPPORTING DATA

It is available.

COMPETING INTERESTS

The author declares that they have no competing financial interests and nothing to disclose.

ACKNOWLEDGEMENTS

Only in uncommon circumstances of unclear imaging findings or deterioration in the patient's conditions, a diagnostic laparoscopy as a minimal invasive approach may settle the diagnosis and can be extended to a therapeutic maneuver.

FUNDING

There is no funding.

AUTHORS' CONTRIBUTIONS

Ahmad Reza Shahraki is the surgeon of patient and writes this paper.

The author declares that they have no competing financial interests and nothing to disclose.

REFERENCES

- G. Hattingh, R. D. Salas-Parra, A. Nuzhad, J. Salvador, and D. T. Farkas, "Duodenal perforation in the pediatric population: two rare cases at a small community hospital," *Journal of Surgical Case Reports*, vol. 2020, no. 11, 2020.
- S. Goyal, A. Garg, and S. Goyal, "Peptic perforation in children: A diagnostic dilemma," 2017.
- Ashish Lal Shrestha¹ and Anusha Shrestha². Perforated Duodenal Ulcer in a Young Nepalese Girl: An Infrequent Diagnosis for Age. *Hindawi Case Reports in Pediatrics* Volume 2021, Article ID 6304309, 3 pages <https://doi.org/10.1155/2021/6304309>.
- K. Azarow, P. Kim, B. Shandling, S.A. Ein, 45-year experience with surgical treatment of peptic ulcer disease in children, *J Pediatr Surg*, 31 (6) (1996), pp. 750-753.
- M.C. Hua, M.S. Kong, M.W. Lai, C.C. Luo, Perforated peptic ulcer in children: a 20-year experience. *J Pediatr Gastroenterol Nutr*, 45 (1) (2007), pp. 71-74,.
- S.W. Bickler, M.W. Harrison, J.R. Campbell Perforated peptic ulcer disease in children: association of corticosteroid therapy, *J Pediatr Surg*, 28 (6) (1993), pp. 785-787.
- R. Dohil, E. Hassall. Peptic ulcer disease in children, *Baillieres Best Pract Res Clin Gastroenterol*, 14 (1) (2000), pp. 53-73.
- M.J. Edwards, S.J. Kollenberg, M.L. Brandt, D.E. Wesson, J.G. Nuchtern, P.K. Minifee, et al. Surgery for peptic ulcer disease in children in the post-histamine-2-blocker era *J Pediatr Surg*, 40 (5) (2005), pp. 850-854.
- D. Ertem Clinical practice: Helicobacter pylori infection in childhood, *Eur J Pediatr* (2012).
- S. Schwartz, Y. Edden, B. Orkin, M. Erlichman. Perforated peptic ulcer in an adolescent girl. *Pediatr Emerg Care*, 28 (7) (2012), pp. 709-711.
- A.C. Ford, A.T. Axon Epidemiology of Helicobacter pylori infection and public health implications *Helicobacter*, 15 (Suppl. 1) (2010), pp. 1-6.
- Sara Morrison^a Peter Ngo^b Bill Chiu^a Perforated peptic ulcer in the pediatric population: A case report and literature review. *Journal of Pediatric Surgery Case Reports*. Volume 1, Issue 12, December 2013, Pages 416-419.
- Ciubotaru AD and Leferman CE. Case Report: Peptic ulcer disease following short-term use of nonsteroidal anti-inflammatory drugs in a 3-year-old child [version 2; peer review: 2 approved with reservations]. *F1000Research* 2021, 9:419. (<https://doi.org/10.12688/f1000research.24007.2>).
- Raza A. Patel,¹ Susan S. Baker,² Wael N. Sayej,³ and Robert D. Baker². Two Cases of *Helicobacter pylori*-Negative Gastric Outlet Obstruction in Children. *Hindawi Publishing Corporation Case Reports in Gastrointestinal Medicine* Volume 2011, Article ID 749850, 3 pages doi:10.1155/2011/749850.
- Samuel Negash^a, Tarekeng Jembere^a, Gersam Abera^b, Elias Kedir^b, Beza Eshetu^a. Gastric outlet obstruction due to peptic ulcer disease in a 5 years-old female child. Case report. June 23, 2022. *International Journal of Surgery Case Reports*. Volume 105, April 2023, 108086.
- Alshehri A, Alsinan TA. Perforated duodenal ulcer secondary to deferasirox use in a child successfully managed with laparoscopic drainage: A case report. *World J Clin Cases*. 2022 Dec 6;10(34):12775-12780. doi: 10.12998/wjcc.v10.i34.12775. PMID: 36579108; PMCID: PMC9791504.
- Incidence and Outcomes of Perforated Peptic Ulcers in Children: Analysis of the Kid's Inpatient Database and Report of Two Cases Treated by Laparoscopic Omental Patch Repair. 11 Feb 2019 <https://doi.org/10.1089/lap.2018.0186>.
- Peptic ulcer disease in children. 2020 . <https://doi.org/10.33204/mucosa.706681>.
- Ashish Lal Shrestha¹ and Anusha Shrestha². Perforated Duodenal Ulcer in a Young Nepalese Girl: An Infrequent Diagnosis for Age. *Hindawi Case Reports in Pediatrics* Volume 2021, Article ID 6304309, 3 pages <https://doi.org/10.1155/2021/6304309>.
- Genevieve Hattingh, Ruben D Salas-Parra, Afrin Nuzhad, Joselyn Salvador, Daniel T Farkas, Duodenal perforation in the pediatric population: two rare cases at a small community hospital, *Journal of Surgical Case Reports*, Volume 2020, Issue 11, November 2020, rjaa455.