CASE REPORT

Valentino Syndrome: Case Report

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Port J Pediatr 2023;54(2):128-30
DOI: https://doi.org/10.25754/pjp.2023.24865

Abstract

Abdominal pain is a common complaint in the pediatric emergency department. Perforation of a peptic ulcer is a rare occurrence in children and is a commonly overlooked etiology. This study presents a case of a previously healthy 16-year-old male presenting with right lower quadrant abdominal pain. Physical examination, laboratory test, and ultrasound results were suggestive of acute appendicitis. The laparoscopy results, which showed a normal appendix, and the following clinical findings, led to the diagnosis of a perforated pre-pyloric ulcer. Valentino syndrome occurs when a patient with a perforated ulcer presents with pain in the right lower quadrant, which mimics appendicitis, a far more common condition.

Keywords: Abdomen, Acute/etiology; Abdominal Pain/etiology; Adolescent; Duodenal Ulcer/complications; Peptic Ulcer Perforation/diagnosis

Keypoints

What is known:
- Abdominal pain is a common complaint in the pediatric emergency department.
- Perforation of peptic ulcers is rare in the pediatric population.
- Valentino syndrome, due to perforated ulcer, mimics appendicitis.

What is added:
- Perforated ulcer occurs in pediatric patients albeit uncommonly.
- Valentino syndrome can cause right lower quadrant pain in pediatric patients and must be considered in the differential diagnosis.
- A normal appendix upon laparoscopy should prompt intra-operative search of a ruptured ulcer.

Introduction

The eponymous Valentino syndrome refers to pain in the right iliac fossa due to a perforated ulcer, which mimics appendicitis.[1]

Leakage from an anterior peptic ulcer allows duodenal and gastric contents to be collected in the right lower quadrant, resulting in chemical peritonitis and periappendicitis. The diagnosis is most often made intraoperatively, although the finding of a normal appendix on ultrasound can raise suspicion. This syndrome has mainly been described in adult patients, as well as few pediatric cases.[2]

Perforation of a peptic ulcer is a rare occurrence in children. It occurs more frequently in male adolescents with a history of ongoing abdominal pain for several months, non-steroid anti-inflammatory drugs use, and underlying illness.[3]

Case Report

A 16-year-old male presented to the emergency department with right lower quadrant abdominal pain with sudden onset. He had no complaints of fever, emesis, obstipation, or diarrhea. On physical examination, he looked hydrated with no signs of anemia or fever. The abdomen was not distended but it was tender, particularly in the inferior quadrants, with a peritoneal reaction.

Laboratory testing revealed normal hemoglobin level (16.2 x 10 g/L), leukocytosis 20 410 cells/µL with left shift (neutrophils 93%), normal coagulation times, and elevated C-reactive protein (13.4 mg/L). Abdominal ultrasound showed an 8.6 mm tubular structure on the right iliac fossa, surrounded by purulent fluid.

The patient was assumed to have complicated appendicitis and was taken to the operating room for laparoscopic appendectomy. Laparoscopy revealed

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Received: 22/06/2021 | Accepted: 11/11/2022 | Published online: 01/04/2023 | Published: 01/04/2023

an apparently normal appendix. Fibrin deposits were found in the retrovesical recess, right paracolic sulcus, and inferior liver recess, together with non-bilious turbid fluid, which was collected for analysis. After extensive abdominal exploration with no macroscopic alterations, primary bacterial peritonitis was assumed, and incidental appendectomy was performed.

Post-operatively, the patient was kept in *nil per os* and started on antibiotics (cefuroxime, gentamicin, and metronidazole) as well as analgesics. Abdominal pain, now located in the epigastrium, persisted. Ascitic fluid analysis results indicated a high leukocyte count (148 103 cells/µL) with low glucose (< 5 mg/dL) and high amylase (4298 U/L, three times the plasma value).

Abdominal computed tomography on the first post-operative day revealed residual pneumoperitoneum and peritonitis (assumed post-laparoscopy). On the second post-operative day, the clinical condition deteriorated, with deterioration of abdominal pain, progressive abdominal distension, paucity of abdominal sounds, and diffuse tenderness. A new computed tomography scan revealed an increased pneumoperitoneum with a defect in the duodenal bulb wall.

The patient was submitted to laparotomy. Upon peritoneum opening, there was an immediate release of a significant amount of gastric and biliary fluids. On exploration, a 3 cm wide bulbar perforation was identified. The perforation was closed with polydioxanone 3-0 and reinforced with a greater omentum patch (Graham's patch). The postoperative course was complicated by acquired factor VII deficit and intra-abdominal hematoma that required surgical drainage.

The patient was discharged fully recovered and kept on proton bomb inhibitors. Follow-up esophagogastroduodenoscopy was performed three months after discharge and its results revealed diffuse nodular antral gastritis. Histopathological examination results for *Helicobacter pylori* were negative.

Discussion

The differential diagnosis of abdominal pain in pediatric patients is broad and includes surgical and medical conditions. In female adolescents, frequently considered conditions are gastroenteritis, mesenteric adenitis, inflammatory bowel disease, Meckel diverticulitis, and adnexal pathology. Perforated ulcer, due to its rarity, is a commonly overlooked diagnosis in non-adult patients. Published series report higher incidence rates in male adolescents.[4] The etiology seems to have geographic distribution; accordingly, infectious causes, such as malaria and gastroenteritis, are more common in Asia and West Africa while non-steroid anti-inflammatory drugs use, severe underlying illness, trauma, and iatrogenic perforation are the leading causes in Western countries.[3]

Valentino syndrome occurs when pain in the right lower quadrant is due to a perforated ulcer that mimics appendicitis. It is named after Rudolph Valentino, an actor deceased in 1926 at age 31 due to a perforated gastric ulcer treated as acute appendicitis.[1] Leakage of digestive fluids and accumulation in the right iliac fossa that causes peritonitis leads to the frequent misdiagnosis of acute appendicitis, a much more common situation.[5]

In this case report, the patient presented with sudden abdominal pain, which is uncommon in appendicitis. However, clinical, laboratory, and ultrasound findings were suggestive; hence, the abdominal radiograph, which might have revealed pneumoperitoneum, was not performed.

It was assumed that the small size of the perforation at this stage, together with its bulbar location, precluded the intra-operative diagnosis. Besides, no efflux of bile was noted from the duodenum, which is a common finding in perforated ulcer.[3] Although primary peritonitis is uncommon in adolescents, cases in previously healthy adolescents have been reported.[6]

Abdominal pain with sudden onset is suggestive, particularly in the case of a male adolescent with signs of pneumoperitoneum on abdominal radiograph and peritonitis with a normal appendix on abdominal ultrasound. Laparoscopy has been the mainstay of treatment of both appendicitis and perforated ulcer. Intra-operative findings of the normal appendix and fibrinous exudates on the right lower quadrant and liver bed demand careful inspection of the stomach and duodenum in search of perforations. However, peptic ulcer perforations might not be immediately found, especially if they have a small size and the liver is obstructing the view, highlighting the need for a high suspicion index.

Author Contribuitions

CL, MK, PRP and MLS participated in acquisition of data. SCP, RA, CL, MK and PRP participated in the analysis or interpretation of data. MLS participated in the drafting of the manuscript. SCP and RA participated in the critical revision of the manuscript. All authors approved the final manuscript and are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflicts of Interest
The authors declare that there were no conflicts of interest in conducting this study.

Funding Sources
There were no external funding sources for the realization of this paper.

Provenance and peer review
Not commissioned; externally peer reviewed

Confidentiality of data
The authors declare that they have followed the protocols of their work center on the publication of patient data.

Consent for publication
Consent for publication was obtained from the legal guardian.

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Síndrome de Valentino: Caso Clínico

Resumo
A dor abdominal é uma causa comum de recurso ao serviço de urgência pediátrico. A perfuração de úlcera péptica, sendo uma ocorrência rara em crianças, é um diagnóstico frequentemente não considerado. Apresentamos o caso de um rapaz de 16 anos, sem antecedentes pessoais de relevo, com dor abdominal no quadrante inferior direito. O exame objetivo, avaliação analítica e ecografia abdominal eram sugestivos de apendicite aguda. O achado de um apêndice sem alterações na laparoscopia, e a evolução clínica no pós-operatório, levaram ao diagnóstico de perfuração de úlcera do bulbo duodenal. A síndrome de Valentino refere-se à presença de dor abdominal na fossa ilíaca direita, mimetizando apendicite aguda, em contexto de perfuração de úlcera.

Palavras-Chave: Abdómen Agudo/etiologia; Adolescente; Dor Abdominal/etiologia; Úlcera Duodenal/complicações; Úlcera Péptica Perfurada/diagnóstico