

Valentino appendix: A report of 3 cases

Rizwan Sultan, Khuwaja Muhammad Inam Pal

Abstract

We present three cases of young male patients with perforated duodenal ulcer that were diagnosed and treated as appendicitis with appendectomy. They presented with peritonitis and were treated accordingly. Because of the misdiagnosis, their hospital course was significantly prolonged. This morbidity could have been avoided by careful history-taking, examination and per-operative findings.

Keywords: Duodenal ulcer, Appendicitis.

Introduction

Appendicitis is a common surgical emergency.¹ Correct diagnosis until recently was mainly based on clinical assessment with minimal investigational support.^{2,3} This approach though still valid does have a well-recognised shortcoming; that of a significant negative appendectomy rate.⁴ In literature, this varies from 8-20%; the higher incidence invariably seen in young women.⁴

A related issue, less well-addressed in literature, is that of missed pathology. Non-surgical conditions mimicking appendicitis like mesenteric adenitis and Mittelschmerz, etc. often underlie an incorrect diagnosis. Treated with an appendectomy, the self-limiting course of these conditions does not adversely affect outcome. On the contrary, significant surgical pathology elsewhere in the abdomen may superficially resemble appendicitis. In these situations the traditional right lower quadrant incision may not allow the surgeon to visualise the area of primary pathology. The appendix in these situations maybe involved in the peritoneal inflammatory response and thus misguides the operator into undertaking an appendectomy. The outcome in these situations can be catastrophic due to delays in diagnosis and treatment of primary pathology. One such scenario is that of a perforated duodenal ulcer, presenting with pain and tenderness in the right iliac fossa and being misdiagnosed and treated with appendectomy. The condition carries the name of one of its famous victims; a popular American film actor of early 20th century, Rudolph Valentino, who

died in 1926 due to complications related to a perforated duodenal ulcer which was misdiagnosed and treated with an appendectomy.⁵

We discuss 3 cases, managed at a tertiary care hospital, presenting over a 2-year period in which the initial diagnosis of appendicitis and its surgical treatment was undertaken at another facility.

Case-1

A 30-year-old male patient presented to the emergency room (ER) 3 days after an open appendectomy procedure, with persisting abdominal pain, vomiting and high-grade fever. Examination demonstrated tachycardia, dehydration and signs of generalised peritonitis. A contrast-enhanced computed tomography (CT) scan showed oral contrast spillage in the duodenal area. At laparotomy a perforated duodenal ulcer (DU) was found. The appendectomy site was unremarkable. A Graham patch repair and peritoneal washout was done. He required 2 days of post-operative ventilation and was discharged tolerating oral intake on the 12th post-operative day.

Case-2

A 48-year-old male with no known co-morbidities underwent open appendectomy 7 days before presentation to ER with abdominal distension and pain. On assessment he was noted to be tachycardiac and febrile. Biliary discharge was noted from the wound with signs of generalised peritonitis. A laparotomy following resuscitation demonstrated a perforation in the first part of the duodenum. The appendectomy site was intact. A Graham patch repair and peritoneal washout was performed. Laparotomy and appendectomy wounds were left open. He needed 4 days of post-operative ventilation and was discharged tolerating an oral diet and needing wound care on the 13th post-operative day.

Case-3

A previously healthy 28-year-old male was brought to ER 10 days after an open appendectomy with complaints of abdominal pain distention and vomiting. On clinical assessment he was noted to be in septic shock with signs of generalised peritonitis. At laparotomy a perforated DU was noted to be the primary pathology. A Graham patch

.....
Department of Surgery, Aga Khan University Hospital Karachi, Pakistan.

Correspondence: Rizwan Sultan. Email: rizwan.sultan@aku.edu

repair with peritoneal toilet was the definitive treatment. His post-operative recovery was complicated, requiring ventilation for 5 days, ventilator-associated pneumonia and abdominal wound dehiscence. The latter required an incisional hernia repair 6 months later.

Discussion

Acute appendicitis is one of the commonest surgical emergencies seen in young adults. A text book presentation of peri-umbilical pain shifting to right iliac fossa with a change in its character can be missing or only partially elicited. The reasons for this may be variation in clinical presentation, atypical presentations or, as is often the case, inadequate enquiry. In a busy ER environment, for a young male patient with a short history of abdominal pain and tenderness in the right lower abdomen, appendicitis is one of the top differential diagnoses.

Valentino appendix is a well-described though uncommon situation where a perforated DU is misdiagnosed as appendicitis. Clinical signs of appendicitis are due to inflammatory contents trickling down the right paracolic gutter and thus presenting with tenderness and guarding involving the right lower abdomen. This uncommon clinical scenario is a good example of the importance of careful history-taking before attempting physical examination. The sequence of pain in appendicitis has a distinct pattern due to involvement of two distinct pain pathways. The initial pain is due to stimulation of the visceral pain pathway arising from a mid-gut derivative; hence it is poorly localised and felt around the peri-umbilical area. Once inflammation involves the peritoneal surface of the appendix, the predominant pain type becomes somatic due to parietal peritoneal inflammation. This is sharp in character and predominantly experienced in the right lower quadrant to start with. This change in location and character is important diagnostically and is known as shifting or migration of pain.

Pain due to perforation of a DU is fundamentally different. The event is very sudden and almost always severe to start with, there may be a longer history of upper abdominal pain with relationship to meals in some patients; this almost always is distinctly different than the presenting complaint. The pain of perforation is due to exposure of the peritoneal cavity to irritant upper gastrointestinal contents and is somatic in nature from the onset. The change in location is not accompanied with

a change in character of pain and is more akin to radiation rather than shifting/migration of pain.

The correct diagnosis should also be suspected if the surgeon is faced with bile stained contents in the right iliac fossa (RIF) with an inflamed but not perforated appendix. With a classical right lower quadrant incision for appendectomy it would typically not be possible to visualise a perforated DU. Faced with such a possibility, the safer thing to do would be to close the primary incision and undertake a formal laparotomy through an upper midline incision. Another approach would be to undertake a 'reverse conversion'.⁶ Here an open procedure is converted into a diagnostic laparoscopic approach after closing the primary incision.

With laparoscopic appendectomy rapidly gaining ground, it is possible that the low incidence of missed perforated DU would be eliminated completely at some time in the future.

Conclusion

Appendicitis is a common surgical emergency. The diagnosis is mostly clinical and based on history and physical examination. One of a number of disease conditions that may superficially mimic this clinical picture is a perforated DU. Correct preoperative differentiation should be possible in the vast majority of cases. But surgeons undertaking appendectomies through right lower quadrant incisions should suspect a perforated DU if faced with bile-stained fluid in the peritoneum, especially in the presence of a non-perforated appendix.

References

1. Addiss DG, Shaffer N, Fowler BS, Tauxe RV. The epidemiology of appendicitis and appendectomy in the United States. *Am J Epidemiol* 1990; 132: 910-25.
2. Pickhardt PJ, Lawrence EM, Pooler BD, Bruce RJ. Diagnostic performance of multidetector computed tomography for suspected acute appendicitis. *Ann Intern Med* 2011; 154: 789-96, W-291.
3. Brigand C, Steinmetz JP, Rohr S. [The usefulness of scores in the diagnosis of appendicitis]. *J Chir (Paris)* 2009; 146: 2-7.
4. Seetahal SA, Bolorunduro OB, Sookdeo TC, Oyetunji TA, Greene WR, Frederick W, et al. Negative appendectomy: a 10-year review of a nationally representative sample. *Am J Surg* 2011; 201: 433-7.
5. Paddle KC. Perforated Duodenal Ulcer Simulating Acute Appendicitis. *Br Med J* 1928; 2: 699.
6. Navez B, Delgado X, Cambier E, Richir C, Guiot P. Laparoscopic approach for acute appendicular peritonitis: efficacy and safety: a report of 96 consecutive cases. *Surg Laparosc Endosc Percutan Tech* 2001; 11: 313-6.