Acute Traumatic Appendicitis: Not Just a Coincidence

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Background

•Appendicitis is one of the most common causes of abdominal pain in the emergency department. [1]

•Presents with pain, fever, leukocytosis and often attributed to bacterial invasion or inflammatory obstruction.

•Similar clinical findings have been described following another common scenario-blunt abdominal trauma.

•Only 28 documented cases of traumatic appendicitis. [2]

•Proposed causative mechanisms include direct compression, shear forces or mesenteric injury.

•Literature suggests this may be a logical fallacy given the high incidence of appendicitis and trauma within a population, rather than a true diagnosis. [3]

•This case provides objective evidence of a causal relationship between blunt abdominal trauma and acute appendicitis.

Case Description

•Previously healthy adult male, with one day of right lower quadrant pain (RLQ) after being struck in the right flank by an industrial dolly.
•Vitals: T 37.2C, HR 96, BP 132/81, RR 16
•Notable Labs: WBC 14.1k, Hb 13.2, CRP < 3
•Exam- GCS 15, abdominal tenderness mostly in RLQ without peritonitis, no external signs of injury.
•**Figure 1** CT scan- appendix not well visualized, hyperdense fluid in RLQ and pelvis.

Operative Findings

•Diagnostic laparoscopy – encountered intraperitoneal hematoma but could not locate appendix or site of injury → conversion to laparotomy.
•Completely necrotic appendix and cecal base with mesenteric avulsion identified within hematoma cavity
•Performed appendectomy and partial cecectomy.
•Pathology: Transmural necrosis and inflammation without evidence of perforation or malignancy.

•**Figure 2:** Specimen with avulsed mesentery and demarcated full thickness necrosis without evidence of purulent inflammation.



Figure 1

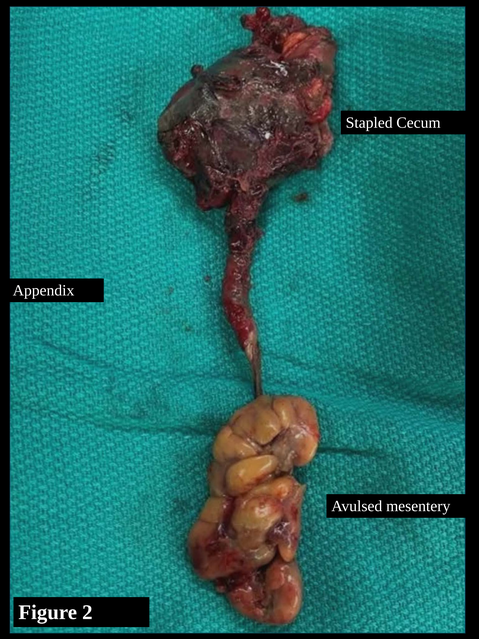


Figure 2

Discussion

•Cases of post traumatic appendicitis may be a coincidental occurrence
•However, certain findings in these cases can support a causal link.

•Proposed diagnostic criteria for traumatic appendicitis: [4]
1.Asymptomatic prior to trauma
2.Symptom onset between 6-48 hours after direct trauma to abdominal wall
3.Surgical confirmation of appendicitis

•Objective evidence that this appendicitis was clearly caused by blunt abdominal trauma.
•Classic symptoms of appendicitis with onset and progression following direct abdominal trauma.
•Mesenteric avulsion led to hematoma and necrosis of appendix.

•In conclusion, this was no coincidence.

1. Rud, B., T. S. Vejborg, E. D. Rappeport, J. B. Reitsma and P. Wille-Jørgensen (2019). "Computed tomography for diagnosis of acute appendicitis in adults." Cochrane Database Syst Rev **2019(11)**.
2. Toumi, Z., A. Chan, M. B. Hadfield and N. R. Hulton (2010). "Systematic review of blunt abdominal trauma as a cause of acute appendicitis." Ann R Coll Surg Engl **92(6): 477-482.**
3. Nasmanis, D. N. and T. Barker (2023). "Traumatic appendicitis is probably not real: an illustrative analysis of coincidental occurrences in nature." Trauma Surg Acute Care Open **8(1): e001093.**
4. Cobb, T. (2017). "Appendicitis following blunt abdominal trauma." Am J Emerg Med **35(9): 1386.e1385-1386.e1386.**