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A case report of necrotizing fasciitis of the abdominal wall: A rare, life-threatening complication of a common disease process

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ABSTRACT

INTRODUCTION: Acute appendicitis is one of the most common surgical diseases, but perforated appendicitis resulting in necrotizing fasciitis of the abdominal wall is exceedingly rare.
PRESENTATION OF CASE: A 71-year-old male presented to the emergency department with one week of severe right-sided abdominal pain. He was hypothermic, hypotensive, and tachycardic. His abdomen was distended, with a large, tender, erythematous region over the right abdominal wall. Laboratory evaluation revealed leukocytosis, acute kidney injury, and lactic acidosis. CT scan revealed large collections of fluid and gas in the right abdominal wall as well as inflammation surrounding the right colon. The patient was resuscitated with intra-venous fluid, started on broad-spectrum antibiotics, and emergently brought to the operating room. The patient underwent an exploratory laparotomy, and was found to have appendicitis, which perforated into his abdominal wall resulting in a necrotizing soft tissue infection.
DISCUSSION: The diagnosis of perforated appendicitis resulting in necrotizing fasciitis is often delayed due to the unusual presentation of this common disease. Necrotizing fasciitis is associated with significant mortality and requires immediate intervention.
CONCLUSION: It is imperative to maintain a high index of suspicion for intra-abdominal pathology in patients who present with necrotizing infections of the abdominal wall, flank, back, or groin. The importance of recognizing this complication early and proceeding immediately to the operating room cannot be overstated.

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1. Introduction

Acute appendicitis is one of the most common surgical diseases. Associated mortality is estimated at 0–1.3%, but increases six-fold if perforation occurs [1].

2. Presentation of case

A 71-year-old male presented to the emergency department with one week of severe right-sided abdominal pain, anorexia and subjective fevers. He denied additional symptoms, including nausea, emesis, constipation and diarrhea. He had no history of similar episodes in the past. The patient's past medical history was notable for hypertension, gout, and alcohol abuse. Past surgical history was significant only for a tonsillectomy. Home medications included lisinopril, allopurinol, and motrin.

On physical examination the patient was hypothermic, hypotensive, and tachycardic. His abdomen was distended, with hyperactive bowel sounds. A large area over the right abdominal wall was erythematous, indurated and very tender to palpation. Laboratory evaluation revealed leukocytosis (white blood cell count of 17.4), acute kidney injury (creatinine 2.4 from a baseline of 1.2), and lactic acidosis (lactate 5.2).

CT scan revealed large collections of fluid and gas in the right abdominal wall as well as inflammation surrounding the right colon (Fig. 1). The patient was resuscitated with intra-venous fluid, started on broad-spectrum antibiotics, and emergently brought to the operating room.

The patient underwent an exploratory laparotomy, and was found to have appendicitis, which perforated into his abdominal wall resulting in a necrotizing soft tissue infection. He underwent a washout, and abdominal wall debridement. Cultures grew escherichia coli, klebsiella pneumonia, streptococcus faecium, and streptococcus anginosis. Pathology of the skin and subcutaneous tissue was consistent with acute inflammation and necrosis. The patient improved post-operatively with resolution of his sepsis. He later developed a controlled colo-cutaneous fistula at the site of the perforation.

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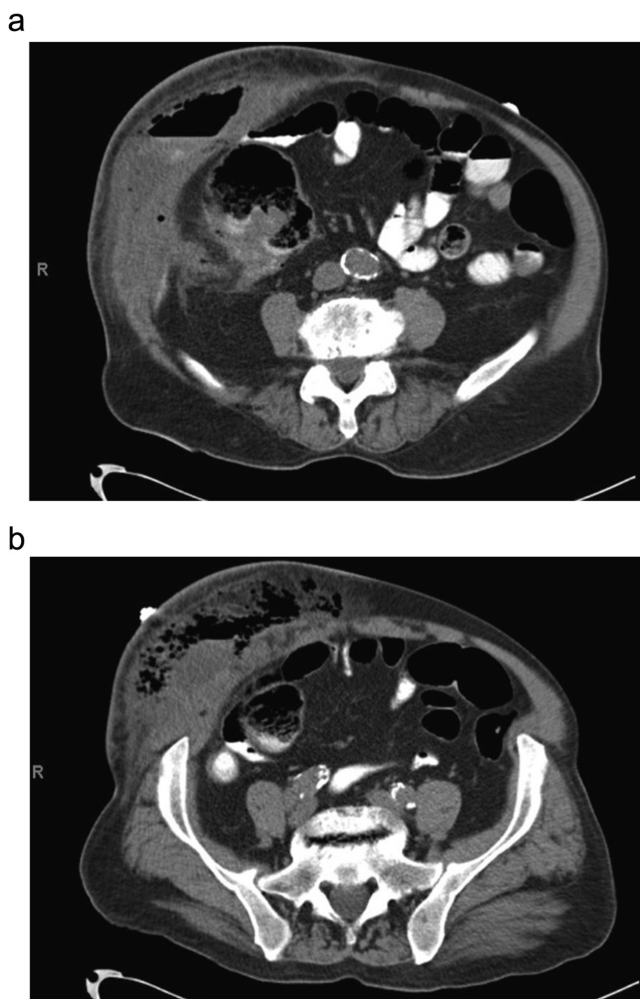

Fig. 1. Axial images from a CT scan of the abdomen and pelvis revealing large collections of fluid and gas in the right abdominal wall as well as inflammatory change adjacent to the right colon.

3. Discussion

Perforated appendicitis resulting in necrotizing fasciitis of the abdominal wall is rare, and described in case reports in the literature. This occurs when the appendix perforates into abdominal wall tissues and causes a rapidly progressive bacterial infection of the fascia. The diagnosis is often delayed due to the unusual presentation of this common disease. Necrotizing fasciitis is a life-threatening event, which requires immediate debridement and broad-spectrum antibiotic treatment, as delay in operative debridement is associated with significant mortality [2]. To date, 14 cases of necrotizing fasciitis as a result of acute perforated appendicitis in adults have been described in the English literature [2,3].

4. Conclusion

It is imperative to maintain a high index of suspicion for intra-abdominal pathology in patients who present with necrotizing infections of the abdominal wall, flank, back, or groin. Successful management of this potentially life-threatening condition involves fluid resuscitation, administration of broad-spectrum antibiotics, and timely operative intervention. The importance of recognizing this complication early and proceeding immediately to the operating room cannot be overstated.

Conflicts of interest

The authors have no conflicts of interest.

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Ethical approval

Case report- no approval obtained.

Informed consent

"Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request."

Authors contribution

All authors contributed to the report concept, data collection, writing and editing the paper.

Guarantor

Tomas Heimann.

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