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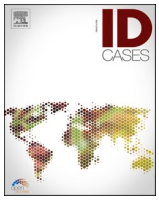

Case report

Necrotizing fasciitis of the thigh: An unexpected route to discover an infected colonic cancer

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ABSTRACT

Introduction: Necrotizing fasciitis (NF) is a rare but potentially fatal soft tissue infection characterized by its aggressive nature. This case report highlights a unique and atypical presentation of NF associated with colorectal cancer.

Case presentation: A 76-year-old male with no significant medical history presented with left knee pain and rapidly progressing septic shock. Clinical examination revealed skin necrosis, inflammation, and swelling in the left thigh and inguinal region. Laboratory investigations showed leukocytosis and elevated C-reactive protein levels. Computed tomography angiography revealed fluid and gas tracking along fascial planes in the left thigh. Surgical intervention revealed NF in the thigh and abdominal wall, with the underlying cause being a perforated sigmoid colon cancer.

Conclusion: Recognizing the polymorphic clinical manifestations of NF and its potential association with underlying abdominal pathology can aid in early diagnosis and improve patient outcomes. This report serves as a reminder of the life-threatening nature of NF and the necessity for rapid and comprehensive management.

Introduction

Necrotizing fasciitis (NF) is an aggressive, life-threatening, soft tissue infection with an incidence of 0.5–1.5 cases per 100,000 populations [1]. It is usually due to synergetic polymicrobial infection. The most common causes of NF are trauma, urinary tract disease and perineal abscess [1]. Treatment involves early surgical debridement of infected tissue followed by broad-spectrum antimicrobial therapy and supportive measures [2]. However, only a few cases of NF associated with intestinal diseases such as perforated colon cancer have been reported [1]. We present the case of a colonic cancer complicated by NF of the thigh.

Case presentation

A 76-year-old male patient, with no medical history, presented to the emergency department for left knee pain progressing over 4 days. On physical examination, the patient was febrile at 38 °C, Glasgow coma scale of 14/15. The heart rate was 125 bpm. The patient was polypneic at 25c/min. He had a swelling measuring 15 cm on the inner side of his left thigh with skin necrosis and inflammatory signs. The abdomen was soft and not painful. However, there was a swelling measuring 5 cm in the left inguinal region with inflammatory signs. Laboratory investigations showed leukocytosis of 30,000E/ml and a C-reactive protein of 400 mg/l. Computed tomography (CT) angiography of the lower limb showed fluid and gas tracking along the fascial planes of the left thigh extended over 30 cm (Fig. 1). The diagnosis of septic shock related to necrotizing fasciitis of the left thigh and abdominal wall was retained and we decided to operate on the patient under general anesthesia. After induction, the patient became hypotensive with tachycardia at 150 bpm requiring high doses of catecholamine. In the first step, we started with an incision in the left inner thigh. About 100 milliliters of pus was removed. Dissection into quadriceps muscle plains allowed drainage of 200 milliliters of pus with necrotic debris which was excised. In the second step, we proceed with an incision in the left inguinal region.

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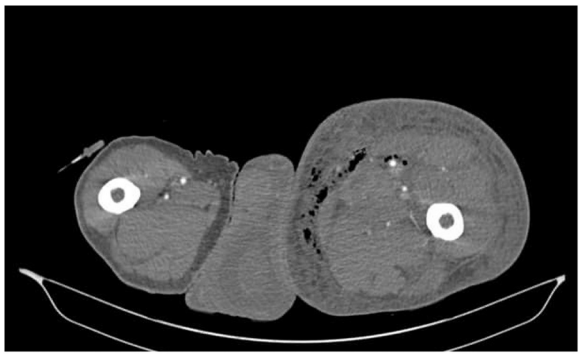

Fig. 1. Computed tomography (CT) angiography of the lower limb: subcutaneous emphysema involving the soft tissues of the left thigh.

Dissection into muscle plans allowed drainage of 100 milliliters of pus with necrotic debris. In the third step, an abdominal midline incision was made. We discovered a 5 cm tumor in the sigmoid based on iliac arterial bifurcation: it was perforated in the retroperitoneum (Fig. 2). The tumor was unresectable, we only performed a colostomy on the left flank with a biopsy of the tumor. Pathological examination of the specimen showed a well-differentiated Lieberkuhnian adenocarcinoma. Bacteriological examination of the pus showed E. coli multi-drug-sensitive with a negative anerobic culture. Due to septic shock and despite the aggressive debridement of necrotic tissues, high doses of intravenous antibiotics and intensive care support, the patient deceased one day after surgery.

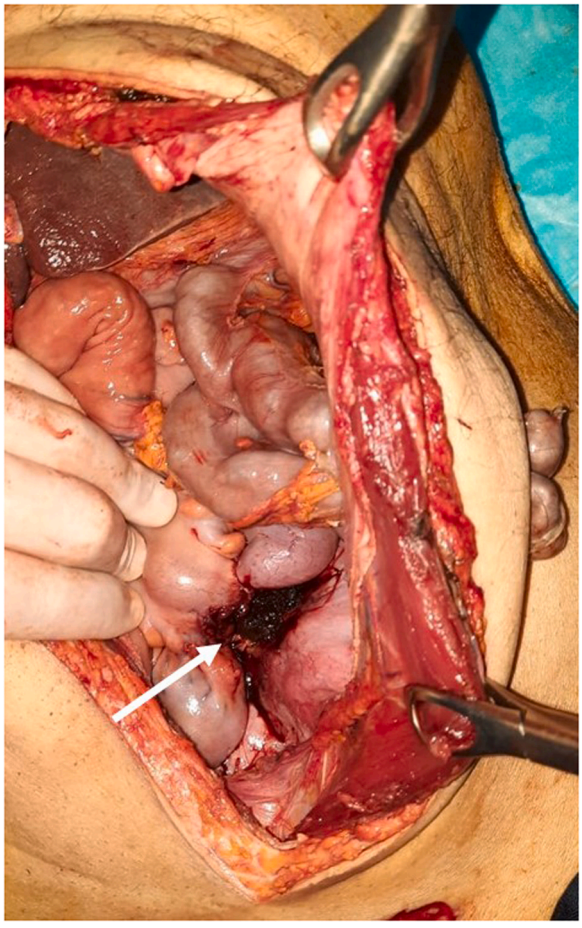

Fig. 2. Intraoperative view showing a 5 cm tumor in the sigmoid adherent to retroperitoneum (white arrow).

Discussion

Due to its acute and rapidly progressive course, NF has a high mortality rate estimated at between 25% and 75% [1]. It's a life-threatening surgical emergency. Thus early diagnosis of necrotizing soft-tissue infections followed by administration of intravenous antibiotics and surgical debridement is the best way of decreasing its mortality [3]. In our case, the delay between our physical examination in the operating room and physical examination in the emergency department highlights the importance of early care in this type of soft-tissue infection.

NF of the abdominal wall due to colorectal cancer is widely reported in the literature. However, NF of the thigh caused by colorectal cancer, as in our case, is extremely rare. In this case, a retroperitoneal abscess formed through the femoral ring and reaching the thigh caused NF to occur [1]. A literature review of atypical presentations of perineal necrotizing fasciitis revealed that perforated gastrointestinal tract malignancy was the etiology in 16% [4]. Clinical features of NF include high fever with chills, tenderness over the affected area changes in skin color and palpable crepitus [3]. In this case report, the patient presented with sepsis, swelling of the thigh and abdominal pain. NF is a clinical diagnosis and requires surgery to confirm. Imaging provides further evidence, but not needed to rule out or confirm the diagnosis. From swelling of the thigh to septic shock, these clinical presentations highlight the clinical polymorphism of NF. It is often initially missed leading to lengthy delays in diagnosis and treatment. Weight loss, transit disorders and abdominal pain, as in our case, are signs that can guide to colon cancer as an etiology of NF. NF can be difficult to recognize in the early stages, so a low index of suspicion is needed when confronted with rapidly spreading erythema or subcutaneous crepitus. Skin necrosis and blistering are late signs [5]. Patients with unexplained soft tissue infections of the thigh should raise suspicion for intra-abdominal pathology and need urgent CT scans [5] for timely diagnosis to avoid delays in the management of sepsis and to offer better operative planning and counseling for the patient. The cornerstone of the management of NF is recognized as being aggressive surgical debridement and intensive support [6]. Urgent surgical debridement down to healthy tissue allows to stop the spread of the infection and reduces systemic toxicity. NF is lethal without operative debridement. Intravenous antibiotics should be started promptly and modified when sensitivities return. However, it is essential to ensure that adequate necrotic material is removed at the first opportunity to reduce the risk of further progression, regardless of the defect that will remain [6].

Conclusion

Our case is interesting due to the unusual clinical presentation of the patient with a colon perforation. It emphasizes the importance of early clinical suspicion, and appropriate antimicrobial and aggressive surgical debridement in the treatment of NF.

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Ethical approval

Not applicable.

Consent

Written informed consent was obtained from the patient for the 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.

CRediT authorship contribution statement

All the authors participate in the treatment of the patients, writing, and approving the manuscript.

Declaration of Competing Interest

No conflict of interest to disclose.

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References

[1] Sato K, Yamamura H, Sakamoto Y, Morohashi H, Miura T, Yoshikawa T, et al. Necrotizing fasciitis of the thigh due to penetrated descending colon cancer: a case report. Surg Case Rep 2018;4(1):136. https://doi.org/10.1186/s40792-018-0544-y. PMID: 30478748; PMCID: PMC6261093.

[2] Freedle C, Rahesh J, Harris M, Tran V, Dissanaike S. Stage IV colorectal cancer presenting after necrotizing soft tissue infection. Proc Bayl Univ Med Cent 2020;34 (1):135–7. https://doi.org/10.1080/08998280.2020.1805675. PMID: 33456176; PMCID: PMC7785173.

[3] Chen JH, Chang PY, Ho CL, Chen YC, Kao WY. Retroperitoneal metastatic adenocarcinoma complicated with necrotizing fasciitis of the thigh in a patient with advanced rectal colon cancer. Case Rep Oncol 2010;3(2):304–9. https://doi.org/10.1159/000319829. PMID: 21347198; PMCID: PMC3042024.

[4] Heidelberg LS, Pettke EN, Wagner T, Angotti L. An atypical case of necrotizing fasciitis secondary to perforated cecal cancer. J Surg Case Rep 2020;2020(11): rjaa371. https://doi.org/10.1093/jscr/rjaa371. PMID: 33214864; PMCID: PMC7655015.

[5] Wiberg A, Carapeti E, Greig A. Necrotising fasciitis of the thigh secondary to colonic perforation: the femoral canal as a route for infective spread. J Plast Reconstr Aesthet Surg 2012;65(12):1731–3. https://doi.org/10.1016/j.bjps.2012.04.006. Epub 2012 Apr 25.

[6] Marron CD, McArdle GT, Rao M, Sinclair S, Moorehead J. Perforated carcinoma of the caecum presenting as necrotising fasciitis of the abdominal wall, the key to early diagnosis and management. BMC Surg 2006;6:11. https://doi.org/10.1186/1471-2482-6-11. PMID: 17010190; PMCID: PMC1615875.