Necrotising fasciitis of the left leg caused by perforated caecal adenocarcinoma

S Pouriki¹, M Skalistira², C Zoumpoulis³, N Alexakis⁴

¹Intensive Care Unit, Hippocratio NHS Hospital, Athens, Greece

²Department of Anesthesiology, Hippocratio NHS Hospital, Athens, Greece

³Department of Histopathology, Hippocratio NHS Hospital, Athens, Greece

⁴Department of Surgery, School of Medicine, National and Kapodistrian University of Athens, Athens, Greece

ABSTRACT

An 82-year-old man presented with abdominal pain and a painful and swollen left thigh. On examination there was oedema, tenderness and crepitus with skin discoloration of the left thigh. Computed tomography showed retroperitoneal perforation of the caecum and necrotising fasciitis of the left thigh. A right hemicolectomy and repeated fasciotomies of the left thigh with debridement of necrotic tissue were performed but the patient died of multi-organ failure. Histology showed a pT4aN2c caecal adenocarcinoma. This is a unique presentation of a retroperitoneal caecal perforation and acts as a reminder that unexplained severe fasciitis of the thigh may be caused by an intra-abdominal pathology.

KEYWORDS

Necrotising fasciitis – Cancer of caecum

Accepted 26 June 2017

CORRESPONDENCE TO

N Alexakis, E: nick.alexak@gmail.com; nalexak@med.uoa.gr

Case history

An 82-year-old man presented to the emergency department with abdominal pain of 3 days' duration and a painful and swollen left thigh. He had a history of hypertension, diabetes mellitus, coronary artery disease, chronic obstructive pulmonary disease, prostate cancer and psoriasis. Twenty-four hours before admission, he was treated with nonsteroidal anti-inflammatories and corticosteroids for back pain radiating to the right iliac fossa.

On examination, the patient was febrile (38 degrees celsius), hypotensive (80/60 mmHg) and tachycardic (114 beats/minute). His left thigh was swollen and tense, with erythema and bruising of the skin and tender with crepitation on palpation (Fig 1). Computed tomography revealed retroperitoneal perforation of the caecum with air along the course of the left iliac vessels and a large amount of air loculated between the muscles extending from the left iliopsoas muscle to the middle of the left tibia (Figs 2 and 3).

A right hemicolectomy with end ileostomy and mucous fistula debridement of necrotic muscle and soft tissue and fasciotomies of the left thigh were performed. The patient was admitted to the intensive care unit with an initial Laboratory Risk Indicator for Necrotising Fasciitis score of 8 and 24 hours later underwent a second operation for fasciotomies/debridement of the left lower limb but died 2 days later due to multi-organ failure. Cultures from the thigh wound

samples showed *Clostridium* sp. and *Proteus* sp. Histological examination of the surgical specimen showed a mucinous adenocarcinoma of the caecum with transmural necrosis and macroscopic perforation (American Joint Committee on Cancer stage pT4aN2cPn0).

Figure 1 The patient's left leg on presentation in the emergency department.

Figure 2 Computed tomography demonstrating retroperitoneal perforation of the caecum.

Figure 3 Computed tomography demonstrating 'gas gangrene' owing to free gas accumulating in the soft tissue spaces at the left thigh.

Discussion

This case represents a very unusual manifestation of caecal cancer perforation. Perforation is a rare complication of colorectal cancer. In a registry analysis from France, perforated colorectal cancers represented 1.6% of all patients.¹ Retroperitoneal perforation of a colonic carcinoma is even more rare, with publications consisting mainly of case reports.² Perforated caecal adenocarcinoma to the retroperitoneum may present as a right gluteal and right thigh soft tissue infection or abscess.^{3,4}

Necrotising fasciitis is a soft tissue bacterial-derived infection and is characterised by the extensive deterioration of the surrounding tissue. It frequently affects the skin, soft tissues and muscles, and may progress rapidly through the fascial planes.⁵ The mortality rate of necrotic soft tissue infection was 4.9% in a large US patient cohort⁶ but mortality rates ranging from 8.7% to 76% have been reported.⁵ The presenting patient had advanced age, multiple comorbidities and late presentation. Retroperitoneal large bowel perforation causes nonspecific symptoms (back pain, vague abdominal pain, anorexia, fever) that were not recognised immediately, which delays appropriate management. Intra-abdominal causes of thigh fasciitis/abscess include colorectal cancer, diverticulitis, appendicitis and Crohn's disease. Aetiology usually coincides with location: right site (caecal cancer, appendicitis) and left site (sigmoid diverticulitis). In the present patient, the caecum perforation resulted in a left-leg necrotising fasciitis with spread of infection through the obturator foramen. This presentation is extremely unusual. There is only one similar report of sigmoid diverticulitis resulting to a right thigh infection.⁷

Patients with unexplained soft tissue infections of the thigh (gas in the thigh) should raise suspicion for intra-abdominal pathology and need urgent computed tomographic imaging for timely diagnosis to avoid delays in the management of sepsis.

References

1. Cheynel N, Cortet M, Lepage C *et al.* Incidence, Patterns of failure, and prognosis of perforated colorectal cancers in a well-defined population. *Dis Colon Rectum* 2009; **52**(3): 406–411.
2. Datta J, Caplow J, Lewis R *et al.* Novel emergency management of descending colon cancer presenting with retroperitoneal perforation. *J Emerg Trauma Shock* 2014; **7**(1): 55–56.
3. Ng NY, Tsoon M, Thomson SE. Psoas abscess and severe fasciitis due to a caecal carcinoma. *BMJ Case Rep* 2015.
4. Mohandas SK, Mazarello F, Bisset R. Right gluteal abscess: an unusual presentation of perforated caecal adenocarcinoma. *J Gastrointest Cancer* 2015; **41**(4): 285–287.
5. Misiakos EP, Bagias G, Papadopoulos I *et al.* Early diagnosis and surgical treatment for necrotizing fasciitis: a multicenter study. *Front Surg* 2017; **4**: 5.
6. Psinos CM, Flahive JM, Shaw JJ *et al.* Contemporary trends in necrotizing soft-tissue infections in the United States. *Surgery* 2013; **153**(6): 819–827.
7. Murphy PB, Belliveau P. Left-Sided sigmoid diverticulitis presenting as right-sided thigh abscess. *Int Surg* 2012; **97**(4): 285–287.