

Necrotizing fasciitis of the thigh secondary to perforated rectal cancer: the sciatic foramen as a route for infective spread

Fascitis necrotizante del muslo secundaria a cáncer de recto perforado: el agujero ciático como vía de diseminación infecciosa

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Abstract

Necrotizing fasciitis (NF) is a potentially life-threatening surgical emergency. It is a rapidly progressive infection of soft tissues, and mortality is related to the degree of sepsis and the general condition of the patient. It is a rare condition that requires a rapid diagnosis and surgical treatment is aggressive debridement. There are a small number of reported cases of perforation of a rectal malignancy leading to NF of the thigh. We present a case with rectal cancer in which the sciatic foramen had provided a channel for the spread of pelvic infection into the thigh.

Keywords: Fasciitis, necrotizing. Debridement. Rectal neoplasms. Sepsis. Thigh.

Resumen

La fascitis necrotizante es una emergencia quirúrgica potencialmente mortal. Es una infección de tejidos blandos rápidamente progresiva y la mortalidad está relacionada con el grado de sepsis y el estado general del paciente. Es una condición poco común que requiere un diagnóstico rápido, y el tratamiento quirúrgico consiste en un desbridamiento agresivo. Existe un pequeño número de casos notificados de perforación de neoplasia maligna de recto que conduce a fascitis necrotizante del muslo. Presentamos un caso de cáncer de recto en el cual el foramen ciático fue el canal para la propagación de la infección pélvica al muslo.

Palabras clave: Fascitis necrotizante. Desbridamiento. Neoplasia rectal. Sepsis. Muslo.

Introduction

Necrotizing fasciitis (NF) is an extremely virulent form of infectious fasciitis. It affects the skin, subcutaneous fat, and superficial and deep muscular fascia by rapidly progressive necrosis. Expedient diagnosis and radical debridement are necessary to prevent the onset of sepsis, multisystem organ failure, and

possible death. Perforated rectal cancer resulting in NF can spread to the perineum and genitals known as Fournier gangrene. This case describes an unusual case of NF of the right thigh secondary to rectal cancer perforation.

This case highlights the need for prompt diagnosis, urgent aggressive surgical debridement, and consideration of a rare underlying cause in the management of necrotizing fasciitis.

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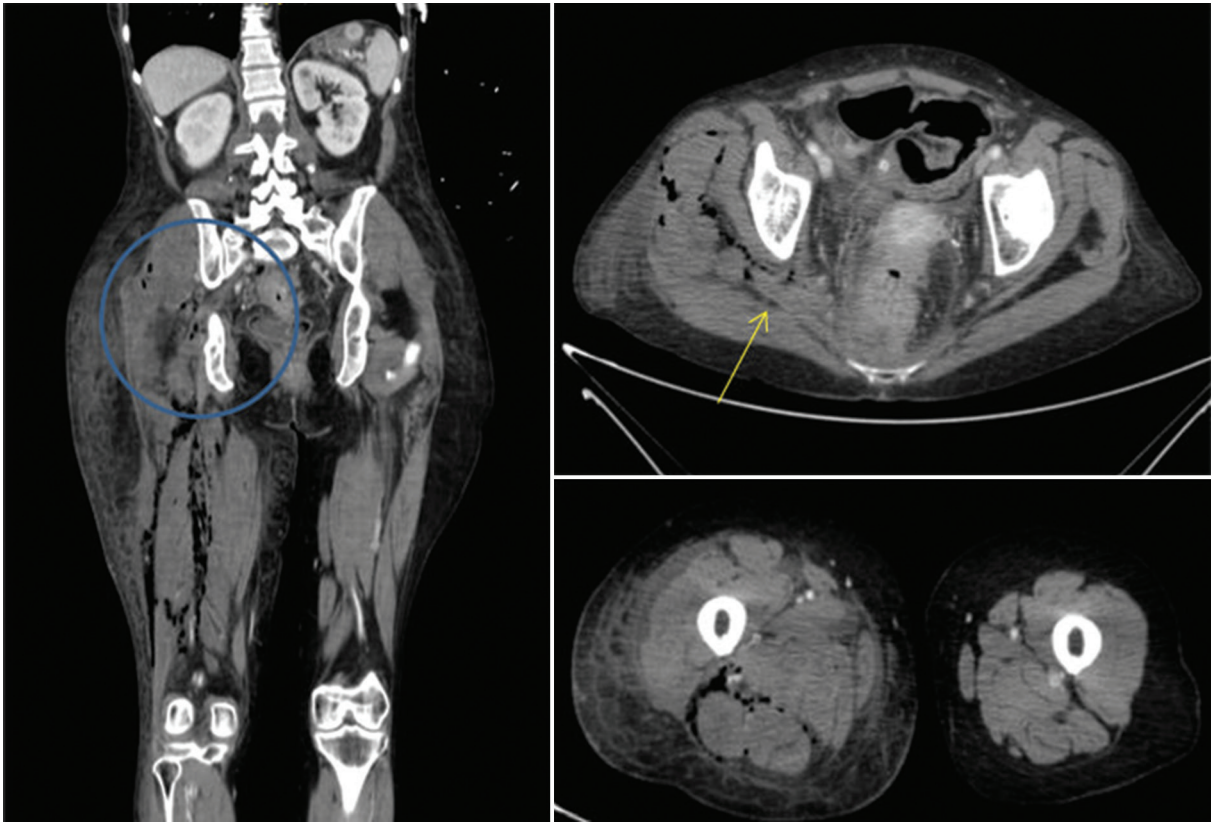


Figure 1. Computed tomography scan of the thigh, demonstrating gas around the left femoral vessels with associated pyomyositis.

Case report

A 61-year-old woman presented acute proctalgia and right thigh pain. She had a locally advanced rectal cancer and had recently completed neoadjuvant chemoradiotherapy.

In the emergency room, she was hemodynamically unstable and septic. On examination, she had functional impotence of the right leg and there was a large tender swelled area on the posterior thigh. Blood tests revealed elevated acute phase reactants (C-reactive protein 315 mg/L and procalcitonin 5.25 ng/mL), leukopenia, acute kidney failure, and metabolic acidosis.

The computed tomography (CT) scan showed ulcerated and perforated rectal neoplasm with a presacral abscess extending through the sciatic foramen and pyomyositis of the right leg muscles with gas around the femoral vessels and sciatic nerve (Fig. 1).

A laparoscopic diverting loop colostomy was performed, as well as debridement of the extensive pyomyositis. Intraoperatively, there was an offensive gas-forming infection of the deep fascia extending between the muscles of the posterior thigh, which was focused on the sciatic nerve (Fig. 2). All of the involved skin, fascia, and muscle were excised.

Following the sciatic nerve proximally, the pus extended above the greater sciatic foramen.

Postoperatively, the patient was transferred to the Intensive Care Unit, and she underwent five further debridements in the theater. A negative pressure dressing was applied for 12 days until the skin defect was covered with skin grafts.

She was discharged after 2 months with neuropathic pain treated with morphic. Additional staging CT was performed with disease progression and the case was discussed at a multidisciplinary meeting where the decision was made to aim for palliative chemotherapy.

Discussion

Necrotizing fasciitis is a potentially life-threatening surgical emergency and can be difficult to recognize in the early stages. It is a rapidly progressive soft-tissue infection, and mortality rates are between 25 and 35%¹. Mortality is related to the degree of sepsis and the general condition of the patient at the time of diagnosis. The infection is usually polymicrobial. Clinical findings include swelling, rapidly spreading cellulitis, severe pain, and palpable crepitus; the patient may be in septic shock.



Figure 2. Intraoperative photograph of debridement. Exploration of the left leg revealed severe soft-tissue infection involving the skin, subcutaneous fat, and fascia; the femoral vein and nerve were covered in infected fascia.

NF can be difficult to recognize in the early stages, so a high index of suspicion is needed when confronted with rapidly spreading erythema or subcutaneous crepitus. Skin necrosis and blistering are late signs. When NF of the abdominal wall or thigh is not associated with an obvious cutaneous portal of entry, an intra-abdominal cause should be sought.

Treatment is mainly surgical, involving early aggressive debridement in conjunction with high-dose intravenous antibiotics and intensive care support². The goal of the debridement is to remove all necrotic tissues, to stop the progressive infection, and to reduce systemic toxicity. Debridement should be repeated when necessary. In cases of rectal perforation, fecal diversion is recommended⁹.

There are very few reported cases of perforation of a rectal malignancy leading to NF of the thigh. There are several possible routes of entry for fecal matter and infection to invade the thigh: Femoral sheath, femoral canal, psoas sheath, sciatic notch, and the obturator foramen.

However, rectal perforation should always be ruled out, especially in patients with a prior history of rectal

disease³⁻⁵. In this patient, the femoral canal provided a channel for the intra-abdominal infection to invade the thigh.

Conclusion

NF is a rare condition that demands prompt diagnosis and surgical treatment is the aggressive debridement to healthy tissue. NF of the thigh secondary to rectal cancer perforation is unusual. Our case highlights the sciatic foramen as a channel for the spread of pelvic infection into the thigh. The loop colostomy promotes wound healing by protecting it from fecal matter.

In addition, NF is a very severe complication that can delay and hinder the definitive treatment of the cancer.

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Conflicts of interest

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Ethical disclosures

Protection of human and animal subjects. The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

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