

## **FOURNIER'S GANGRENE IN A 44-YEAR-OLD WOMAN: CT SCAN FINDINGS**

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**Summary.-** OBJECTIVES: To show standard CT findings and their diagnostic usefulness in female patients suffering from Fournier's gangrene.

METHOD/RESULT: A woman who had undergone a previous lateral internal sphincterotomy presented to the emergency department with severe pain in the hypogastrium and perianal region; physical examination revealed an induration in the left buttock. CT images showed an abscessed collection in the rectovaginal space and gas in the levator ani muscle, left ischioanal fossa and the root of the left thigh.

CONCLUSIONS: CT scan is considered an excellent diagnostic tool in the management of patients with Fournier's gangrene, as it shows both the origin of the infection and its extent.

**Keywords:** Fournier's gangrene. Necrotizing fasciitis. CT scan.

**Resumen.-** OBJETIVOS: Mostrar los hallazgos característicos en TAC y su utilidad diagnóstica en la gangrena de Fournier en mujeres.

METODO/RESULTADO: Mujer con antecedentes de esfínterectomía lateral interna que acude a urgencias por intenso dolor en hipogastrio y en región perineal con endurecimiento del glúteo izquierdo. En la TAC se observa una colección abscesificada en el espacio rectovaginal y gas en músculos elevadores del ano, fosa isquiorrectal izquierda y en raíz del muslo izquierdo.

CONCLUSIONES: La TAC se considera un excelente método diagnóstico en el manejo de pacientes con gangrena de Fournier, mostrando no solo el origen de la infección sino la extensión de la misma.

**Palabras clave:** Gangrena de Fournier. Fasciitis necrotizante. TAC.

## **INTRODUCTION**

Fournier's gangrene was first described by H. Baurienne in 1764 and later by Alfred Fournier in 1883, who gave the condition its eponymous name (one of the multiple names of this infection) (1). Fournier described 5 cases of fulminant genital gangrene, calling it "idiopathic gangrene of the scrotum" (2). In 1952 Wilson used a different term to describe the same disease in other anatomical areas, calling it necrotizing fasciitis (3).

Nowadays, in contrast to those first cases described by Fournier, necrotizing fasciitis in general affects older patients and a causative etiology is usually identified in most of the cases.

Fournier's gangrene is a rapidly spreading (2-3cm/hour) (4), necrotizing fasciitis that normally begins in the perineal, perirectal or genital region, which is associated to a high mortality rate.

It is a rapidly progressing infection involving the deep fasciae of the skin, but superficial to the muscles, that leads to an extensive secondary necrosis. Initially, the infection provokes a subcutaneous cellulitis that is limited at a first stage by the muscular fascia. Subsequen-

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tly, a tissular and cutaneous necrosis occurs, caused by arteriolar thrombotic processes that lead to local ischemia. The infection progresses establishing a vicious circle between infection and ischemia (5).

## CASE REPORT

A 44-year-old woman who had undergone a lateral internal sphincterotomy with surgical removal of a subserous uterine leiomyoma one year ago, presented to the emergency department four days later with pain in the hypogastrium and perianal region, having noticed an induration of the left buttock during the last 48 hours. Examination revealed a considerable erythema and induration of the left buttock, root of the left lower limb, vulva and part of the right buttock, presenting a 4-cm necrotic eschar on the left buttock, close to the anal margin. Within a few hours the patient showed symptoms of septic shock. CT scan findings confirmed the diagnosis of Fournier's gangrene in the perianal region and left buttock (Figures 1-3).

The patient was urgently operated on, purulent vaginal discharge was observed. Three incisions were performed: one in the left buttock, close to the lateral anal margin, with debridement of a 4-cm necrotic eschar, releasing copious purulent material; another incision was made in the posterolateral perianal right margin, and the last one was practiced in the left labium majus. Three drains were left in place. The infection had caused a dissection of the posterior vaginal wall and of the anterior face of the rectum. A wide debridement of the affected areas was undertaken, generously irrigating the perianal region with saline solution and hydrogen peroxide.

One week after the operation, the patient made satisfactory progress.

## DISCUSSION

Fournier's gangrene is a very rare disease with an incidence of 1/75000 adult males and a male to female ratio of 10:1 (6). Lower incidence in females may be caused by better drainage of the perineal region in women. Most of the cases reported occur in patients aged 50-70 years, immunocompromised persons have a higher risk of developing the infection.

Predisposing factors are found in up to 90-95% of patients (7) suffering from Fournier's gangrene. The most prevalent predisposing factor is diabetes (present in up to 60% of the cases) (8), a factor that increases the mortality rate of these patients. Other factors associated with a worse prognosis include alcoholism, peripheral vascular disease, obesity and old age.

In women it appears as a necrotizing infection of perineum or of the vulva, usually secondary to Bartholin gland abscesses, episiotomy, hysterectomy or cervical and pudendal blocks.

It is a polymicrobial infection with an average of 4 different isolates per case. The microorganisms involved vary depending on the origin of the infection (anorectal, urogenital or cutaneous), being *E.coli* the predominant aerobe isolated and *Bacteroides fragilis* the predominant anaerobe.

Regardless of the affected region, mortality rates are very high (73%), due to the complications caused by



FIGURE 1. Intravenous contrast-enhanced CT axial image obtained at the level of the pubic symphysis shows an abscessed collection in the rectovaginal space (white arrow). It also demonstrates gas collections at the level of the elevator muscle of the anus and in the left ischioanal fossa.

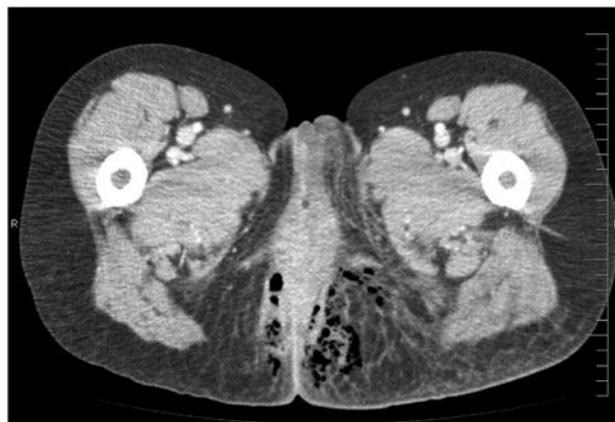


FIGURE 2. In a lower cut, gas dissects the perianal plane.

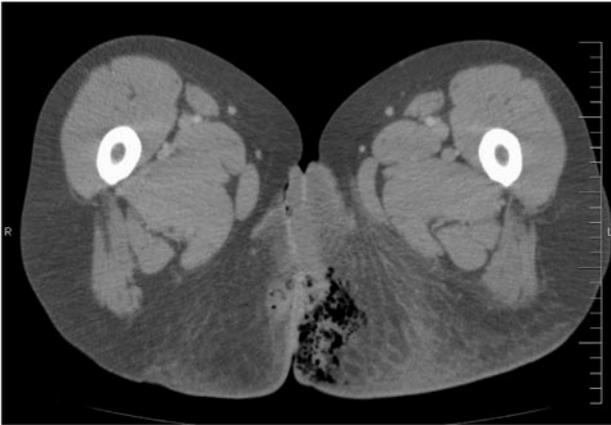


FIGURE 3. This shows how gas reaches the root of the left thigh.

sepsis, respiratory failure, renal failure or multiple organ dysfunction (9).

Fournier's gangrene may begin with an insidious clinical manifestation, but in the absence of diagnosis and adequate treatment, it rapidly leads to a fatal sepsis and death of the patient. Therefore, an early diagnosis and correct treatment are of utmost importance for the rapid management of these infections.

CT scan enables the detection of fascial or subcutaneous edema and abscesses and it is both highly sensitive and specific in the detection of abnormal gas collections, as well as the origin and extent of the infection (10). Furthermore, contrast-enhanced CT allows a differentiation between necrotic and viable tissue.

Thanks to a CT scan, it is possible to establish a diagnosis even before the onset of clinical manifestations, and to improve the surgical planning. This has a positive impact on survival rates.

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