

Case of anal fistula with Fournier's gangrene in an obese type 2 diabetes mellitus patient

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Keywords

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ABSTRACT

A 64-year-old man was admitted to Shin-suma General Hospital, Kobe, Japan, complaining of a 3-day history of scrotal swelling and high fever. He had type 2 diabetes mellitus. On examination, his body temperature had risen to 38.5°C. Examination of the scrotum showed abnormal enlargement. Laboratory data were as follows: white cell count 35,400/ μL and glycated hemoglobin 9.6%. Anal fistula was found in an endorectal ultrasound. Computed tomography scan showed a relatively high density of subcutaneous tissue and elevated air density. Thus, he was diagnosed with Fournier's gangrene. On the fourth hospital day, the patient underwent debridement of gangrenous tissue. Seton surgery was carried out for anal fistula on the 34th hospital day. He responded to the treatment very well. He was discharged on the 33rd postoperative day. Once Fournier's gangrene has been diagnosed, considering the association of anal fistula and perianal abscess is important.

INTRODUCTION

Fournier's gangrene (FG) was first reported in 1883 by Jean Alfred Fournier¹. FG is characterized by a polymicrobial infection (aerobic and anaerobic bacteria) with an identifiable cause in 95% of cases, beginning in the genital or perineal regions². It has a high death rate and an acute surgical emergency is required. Here, we present the case of an anal fistula with FG in an obese type 2 diabetes mellitus patient.



Figure 1 | Air was found in the left testis in enhanced computed tomography (shown by an arrow).

CASE REPORT

A 64-year-old Japanese man was admitted to Shin-suma General Hospital, Kobe, Japan, complaining of a 3-day history of scrotal swelling and high fever. He had type 2 diabetes mellitus with an 18-year history of irregular treatment. Three days before admission, he visited a neighborhood general physician because of painful scrotum. He was given a diagnosis of perianal abscess. Incisional drainage was carried out. However, the symptoms worsened.

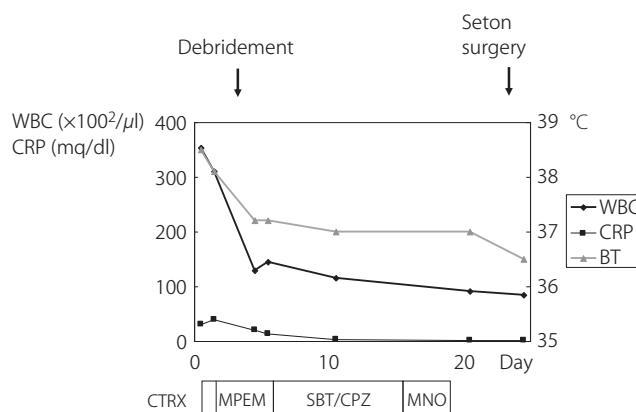


Figure 2 | Clinical course. CTRX, ceftriaxone; MINO, minomycin; MPEM, meropenem; SBT/CPZ, sulbactam/cefoperazone.

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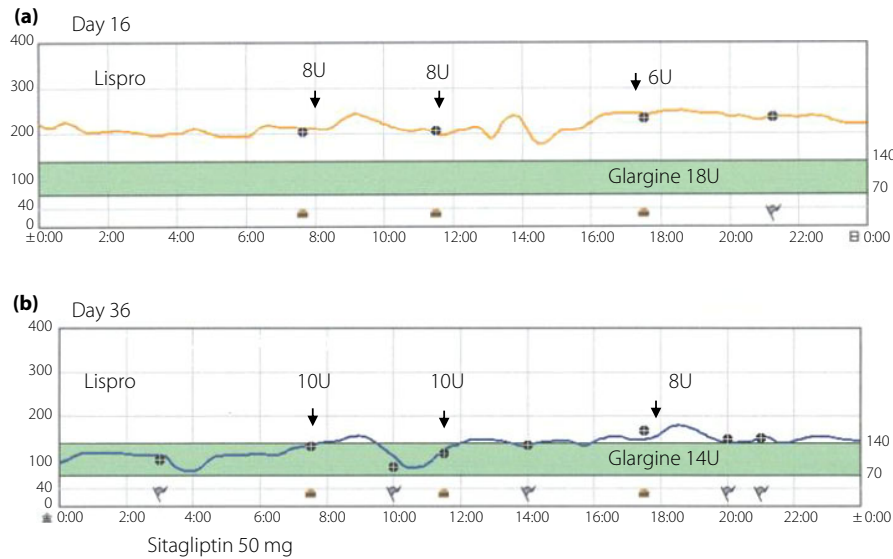


Figure 3 | The 24-h glucose profile using a continuous glucose monitoring system (ipro2[®] Medtronic). (a) Day 16 and (b) day 36.

On examination, his height, bodyweight, and body mass index were 186.0 cm, 113.0 kg and 32.1 kg/m², respectively, and his body temperature rose to 38.5°C. Examination of the scrotum found abnormal enlargement. Laboratory data were as follows: white cell count 35,400/μL with increased polymorph nuclear leukocytosis (90%), hemoglobin 15.3 g/dL, C-reactive protein 31.3 mg/dL, blood urea nitrogen 21.7 mg/dL, serum creatinine 1.0 mg/dL, glycated hemoglobin 9.6% (National Glycohemoglobin Standardization Program) and blood glucose 389 mg/dL. Anal fistula was found by an endorectal ultrasound. Computed tomography scan showed relatively a high density of subcutaneous tissue and elevated air density (Figure 1). Thus, he was diagnosed with FG. Intravenous administration of ceftriaxone 1 g/day was started. However, the next day, that was replaced by meropenem 1 g/day with a broader spectrum.

Simultaneously, an emergency incisional drainage was carried out. The pus was sent for microbial culture and sensitivity test. Culture showed infection of α -*Streptococcus*. Blood sugar level was well controlled within 100–200 mg/dL by intravenous insulin therapy. On the fourth hospital day, the patient underwent debridement of gangrenous tissue. Seton surgery was carried out for anal fistula on the 34th hospital day. He responded to the treatment very well. Laboratory data and body temperature were improved (Figure 2). Blood glucose level was evaluated by continuous glucose monitoring (Figure 3). He was discharged on the 33rd postoperative day.

DISCUSSION

FG has a serious surgical problem, because it is commonly associated with a polymicrobial infection of genitourinary or

perianal source with high mortality and morbidity. Computed tomography scan has a significant value for the evaluation of the extent of the disease³. It has been found that 55% of FG patients have diabetes mellitus⁴. Obesity cannot be a main predisposing factor⁵. Mean leukocyte count was higher in patients who died than in surviving patients⁶. One of the most important prognostic factors influencing mortality was found to be hemodialysis-dependent chronic renal failure, with a death rate of 50%⁶. In the present patient, renal function was maintained. According to Hämäläinen, 37% of patients developed an anal fistula after incision and drainage of an anorectal abscess⁷. Fistulas typically develop after rupture or drainage of a perianal abscess⁸. In the present case, perianal abscess was found at a neighborhood general physician. However, we were unable to detect a relationship between perianal abscess and anal fistula. A total of 27% of patients with FG had perianal abscess, and 9% had anal fistula⁴. Thus, once FG has been diagnosed, considering the association of anal fistula with perianal abscess is important. We conclude that earlier detection and intervention can provide opportunities to improve outcomes of FG.

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DISCLOSURE

The authors declare no conflict of interest.

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