

## Case study

### Treatment of a case of Fournier's gangrene after a perianal abscess debridement

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#### ABSTRACT

Fournier's gangrene is rapidly progressive and potentially fatal infective necrotising fasciitis affecting the external genitalia, perineal or perianal regions. Among many sources of infection, perianal surgical manipulation is one of the major contributing factors. A 45-years diabetic patient who had recently undergone surgical debridement elsewhere to treat a perianal abscess visited SDM Ayurvedic hospital with mild scrotal pain and an unhealthy surgical wound. He was treated surgically with broad-spectrum antibiotics, strict control of hyperglycemia, regular minimum debridement of wound and dressing with a *Yastimadhu taila* (an herbal oil with *Glycyrrhiza glabra*, *Emblica officinalis*, *Sesamum indicum* and cow milk as active ingredients) famous for its wound healing property. The patient gradually recovered and the wound was gradually healed with secondary intention.

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## INTRODUCTION

Fournier's gangrene (FG) is an acute, rapidly progressive, potentially fatal and infective necrotizing fasciitis. It affects the external genitalia, perineal or perianal regions, which is common in men. However, it can also occur in women and children (Smith et al., 1998). This disease often results from polymicrobial aerobic and anaerobic synergistic infection of the fascia. The bacteria can get introduced through urinary, bowel, or dermal sources. Urinary tract infections and other infectious processes of the perineum, such as perianal abscesses, provide a nidus for infection. Surgical manipulation of the genital and perineal areas can provide the initial insult required in the development of FG (Rad and Foreman, 2020; Auerbach et al., 2020).

Perianal abscess commonly results from cryptoglandular infection (Sigmon et al., 2020). If the cryptoglandular abscess is either poorly drained or spontaneously ruptures through the perianal skin, then it becomes fistula in 50% of patients (Hämäläinen and Sainio, 1998). Severe polymicrobial synergistic infection from the gut flora can cause extensive subfascial tissue necrosis involving the scrotum, Fournier's gangrene is an unusual complication of fistula-in-ano (Bakari et al., 2013). The mainstay of successful treatment of Fournier's gangrene is urgent surgical debridement of all necrotic tissue, high doses of broad-spectrum antibiotics with fluids and blood transfusions if needed (Mallikarjuna et al., 2012).

## CASE PRESENTATION

A 45-years old patient had undergone surgical debridement to treat a perianal abscess at a different hospital recently. He visited the hospital at SDM College of Ayurveda, Hassan (Karnataka) with mild scrotal pain and an unhealthy surgical wound. The patient has mild scrotal pain with a mild grade of fever at an earlier stage. He was a known case of Type II Diabetes Mellitus (T2DM) for the last two years and under oral hypoglycemic agents.

The examined patient was feverish (100 °F). Local examination revealed a large unhealthy wound around 6cm x 1cm in size, filled with slough all over the floor. The crust present on surrounding tissues with inflamed edges extends from the lateral anal verge to the mid of the scrotal sac. Tenderness was present all over the ulcer and was present on digital rectal examination too. On the gentle application of pressure at the scrotal base, the yellowish-white pus was drooling out. There was a mild rise in local temperature. There was no bleeding and bilateral testicles were not exposed.

#### Investigations

Various investigations related to the case were done including glucose level, HbA1C, leukocyte counts, renal function test and liver function test. The results are given in Table 1.

**Table 1.** Blood and other investigations of the patient

Parameter	Value
Haemoglobin	12.8 gm/dl
Total leukocyte counts	13,000/mm <sup>3</sup>
Erythrocyte sedimentation rate (ESR)	48 mm/hour
Fasting Blood Sugar (FBS)	204.2 mg/dl
Postprandial Blood Sugar (PPBS)	313.1 mg/dl
Fasting Urine Sugar	1%
Postprandial Urine Sugar	2%
Glycosylated haemoglobin (HbA1C)	9.8%
Mean Blood Glucose	240.1 mg%
Renal function test	Normal
Liver function test	Normal

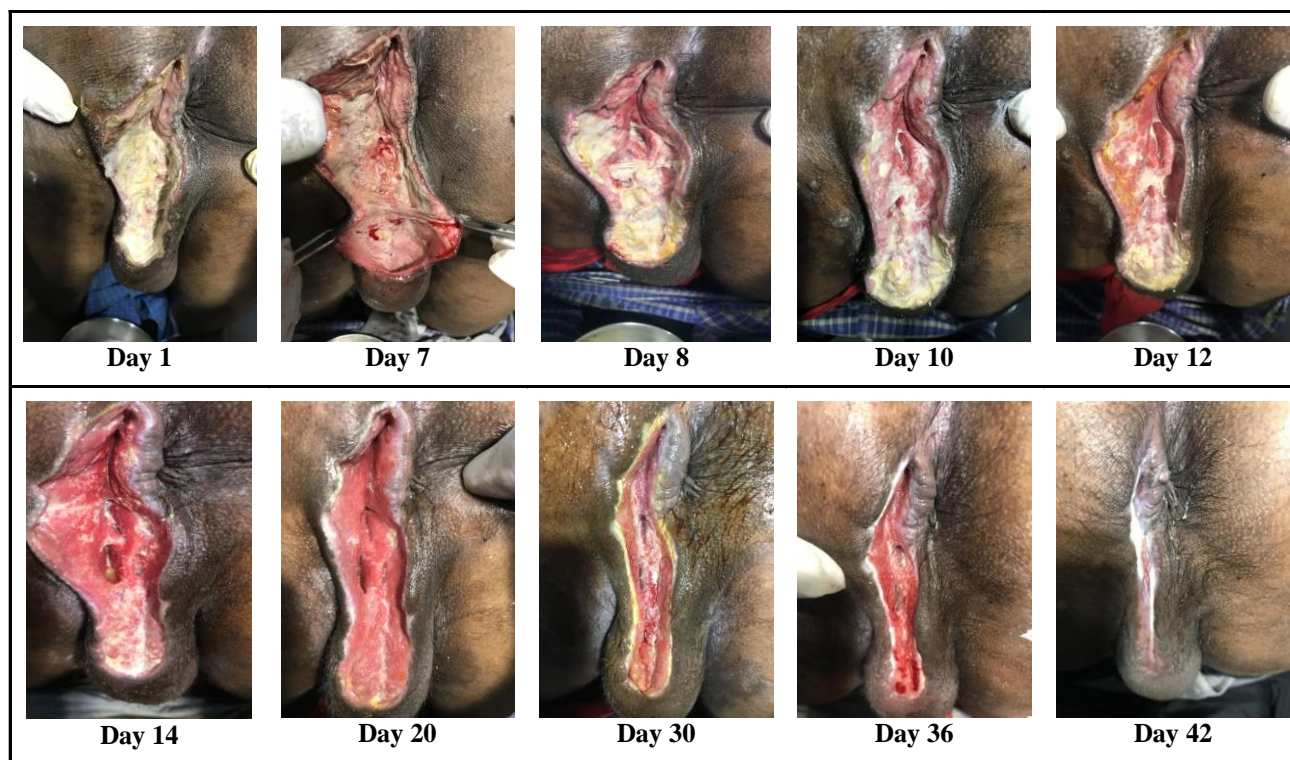
### Treatment

After investigations, the patient was treated with broad-spectrum antibiotics, short-acting human insulin for the strict management of hyperglycemia. Proper debridement of unhealthy tissues along with drainage of pus was done. As soon as the pain and swelling at the

scrotum gradually subsided, care of the wound was done. Regular debridement of the slough, squeezing out of the pus and dressing with *Yastimadhu taila* (a herbal oil where liquorice is the main ingredient) was done. Antibiotics were stopped after seven days of administration and long-acting insulin was started. The dressing was continued until the proper healing of the wound was achieved.

### RESULTS

The wound gradually healed after starting antibiotics and insulin along with debridement of the wound. The pain and tenderness at the scrotal sac subsided. Sloping edges with bleeding was seen after one week of treatment. The slough was completely filled with healthy granulation tissue after two weeks of treatment. But a thin sero-purulent discharge was still present. Discharges from the wound subsided after twenty days of treatment. There was marked shrinkage in the size of the wound along with the proper formation of granulation tissue after 1 month of treatment. The wound was completely healed after 42 days of treatment (Fig. 1).



**Fig. 1.** Changes seen in the wound during the treatment procedure

### DISCUSSION

Perianal abscess leading to Fournier's gangrene is not a common presentation on patients (Sigmon et al., 2020). In this case, the presentation of FG was halted from being more serious and hazardous because the patient presented in proper time in hospital. The patient did not complain of severe pain, fever was mild and sepsis was not present, so radical debridement of scrotal skin and coverings was avoided. At the same time, manual squeezing at the base of the scrotum and draining of the pus along with debridement of the slough was carried out in a regular

fashion. It helped to restrict the infection which prevented the case to a stage of fulminant necrosis and sepsis.

After the infection was under control, *Yastimadhu taila* dressing commenced. *Yastimadhu taila* is a popular Ayurvedic remedy prepared with Liquorice (*Glycyrrhiza glabra*), Indian gooseberry (*Emblica officinalis*), Sesame oil (*Sesamum indicum*) and cow milk. *Yastimadhu* has proven healing, anti-ulcerogenic, anti-inflammatory, skin regenerative activity and most importantly antimicrobial activity (Kokate et al., 2014). In Ayurveda, *Yastimadhu* is considered to be effective for cleansing (*Sodhana*) and healing (*Ropana*) of wounds (API, 2001).

## CONCLUSION

A perianal abscess that leads to Fournier's Gangrene can be properly managed if diagnosed at an early stage. The present study revealed that *Yastimadhu taila* can be useful in healing wounds of surgical debridement of perianal abscess and Fournier's gangrene.

## INFORMED CONSENT

Patient consent was taken before the treatment procedure and the written consent was carried out before recording the data for case reporting.

## CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

## DECLARATION

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