

## Case based learning points

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## Necrotizing Fasciitis in a Patient with Diabetes Mellitus

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**Figure 1:** Anterior-posterior plain X-ray of right leg revealed gas formation in soft tissues

## CASE PRESENTATION

A 46-year-old man was admitted to the emergency department with complaints of fever and skin lesions in the right leg since 3 days before. Moreover, he revealed a history of 5 years of poorly controlled diabetes mellitus despite being on oral medication. On physical examination, he was oriented and the following vital signs were observed: blood pressure: 80/60 mmHg; pulse rate: 90 beats/min; respiratory rate: 18 breaths/min; and oral temperature: 38 °C.

Two large erythematous lesions with central necrosis in the upper segment of the right leg were noticed. Further examination revealed crepitation of the same right leg segment.

Laboratory findings revealed the following: white blood cell (WBC) count, 17,000/mm<sup>3</sup>; hemoglobin, 15 g/dl; sodium, 125 meq/l; potassium, 3.8 meq/l; blood glucose, 400 mg/dl; blood urea nitrogen, 45

mg/dl; creatinine, 2.4 mg/dl; and bicarbonate, 13 meq/l.

Plain X-ray of right leg revealed gas formation in the soft tissues, which was a diagnostic criterion for necrotizing fasciitis (Figure 1). The patient was treated immediately with intravenous fluid, broad spectrum empiric antibiotics (meropenem plus vancomycin), and insulin infusion; moreover, urgent surgical consultation was requested. He underwent emergency debridement within few hours of hospitalization.

## LEARNING POINTS

Necrotizing fasciitis is a progressive and life-threatening infection, which extends to the subcutaneous tissue and fascia (1). Diabetes mellitus is a common underlying cause in about 44.5–72.3% cases. Other predisposing factors include immunosuppressive treatment, older age, malignancy, peripheral arterial disease, and renal failure (2).

The most common manifestations include pain and skin erythema; however, the most specific findings are crepitus and blistering. Only in 25% of the cases, subcutaneous gas is observed in the plain X-ray imaging. Computed tomography scan and magnetic resonance imaging is used in cases when diagnosis is suspicious (2).

In necrotizing fasciitis disease, emergency surgery can save the patient's life (1). Resuscitation with intravenous fluid and inotropic drugs is essential. Most diabetic patients who reveal necrotizing fasciitis are exposed to polymicrobial infections; therefore, broad spectrum empirical antibiotics should be considered for treatment. In addition, insulin therapy is recommended with a target blood glucose level of 140–200 mg/dl (1).

Mortality rate would be still high despite surgical and medical therapy, whereas it is 100% without surgical therapy (1, 3).

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