


**IMAGES IN EMERGENCY MEDICINE**

## Infectious Disease

**Man with a swollen neck**

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**1 | PATIENT PRESENTATION**

A 46-year-old male presented to the emergency department with the chief complaint of “neck swelling.” His examination revealed extensive erythema and edema of the anterior neck extending from the angle of the mandible to the suprasternal notch (Figures 1 and 2). He was hypoxic upon arrival, with no acute respiratory distress and improved with supplemental oxygen. Point-of-care ultrasound (POCUS) was performed (Video 1) and subsequent computed tomography of the neck was obtained (Figure 3). His blood glucose level was 600 mg/dL, lactic acid was 6.3 mmol/L, and he had a leukocytosis of  $22.82 \times 10^3/\text{cm}^3$ .



**FIGURE 1** Anterior view of patient's neck on arrival to the Emergency Department demonstrating initial presentation of neck erythema and edema.



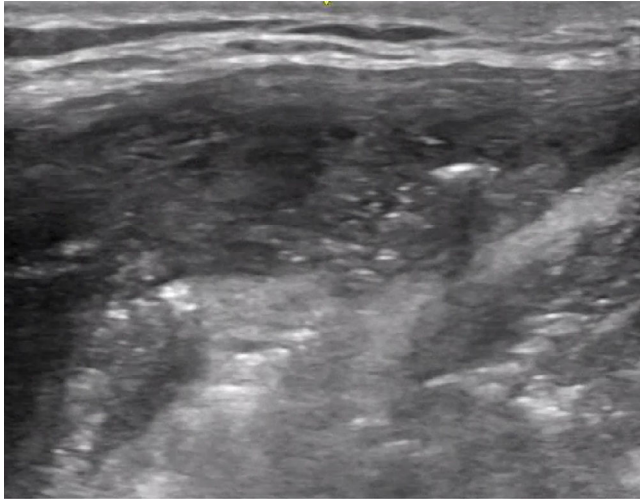
**FIGURE 2** Lateral view of patient's neck on arrival to the Emergency Department demonstrating extensive amount of edema to the anterior neck in comparison to the patient's chest wall.

**2 | DIAGNOSIS: NECROTIZING FASCIITIS OF THE NECK WITH ASSOCIATED MEDIASTITIS**

This case describes necrotizing fasciitis (NF). NF is a life-threatening bacterial infection of deep soft tissues that causes rapidly progressive

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**VIDEO 1** Clip of bedside point-of-care ultrasound demonstrating gas in subcutaneous and muscle fascia.



**FIGURE 3** Computed tomography of the neck demonstrating gas and fluid collection to anterior neck tissue extending into mediastinum, concerning for mediastinitis. Mass effect noted to airway. Erosive changes notes to manubrium concerning for osteomyelitis.

destruction of muscle fascia and subcutaneous fat.<sup>1</sup> Early diagnosis and urgent surgical intervention have been shown to reduce morbidity and mortality, the latter ranging up to 36%.<sup>2,3</sup> This condition occurs more frequently in patients with diabetes, immunosuppression, and substance use disorders.<sup>4</sup> Early recognition is a diagnostic challenge given the scarcity of pathognomonic findings, leading to common misdiagnoses such as cellulitis and abscess.<sup>5</sup> Patients with NF can present with superficial findings limited to skin erythema and edema.<sup>1</sup> POCUS can be a useful tool to identify features of NF, such as subcutaneous emphysema.<sup>2,6</sup> The diagnosis is definitively made through surgical intervention, which is the mainstay of treatment along with aggressive antibiotic therapy.<sup>7</sup> This patient was started on broad-spectrum antibiotics and taken emergently to the operating room by otolaryngology.

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