Clinical picture

Extensive air dissection due to necrotizing fasciitis

A 34-year-old woman presented to our clinic with left thigh painful disability for 7 days. She suffered from dog bite of left thigh about 4 weeks ago status post-wound debridement and just discharged from other hospital 2 weeks ago. Physical examination revealed erythema, swelling, local heat and tenderness of left upper leg with palpation. Laboratory studies revealed elevated C-reactive protein and minimal leukocytosis with a white blood cell count of 10.18 × 10⁹/mm³ (10.18 × 10⁹/µl).

Plain radiographs of the left femur showed extensive subcutaneous gas in the thigh (Figure 1A). Surprisingly, routine chest radiographs also demonstrated ill-defined gas collection in supraclavicular region.

Figure 1. (A) Radiograph of the left femur showed extensive subcutaneous gas in the thigh. (B) Non-contrast enhanced CT scan with sagittal reconstruction showed subcutaneous fat stranding and extremely gas dissecting along fascial planes from neck, chest, abdomen and pelvis (white arrows).
region and subcutaneous area of left chest wall. Computed tomography (CT) scan confirmed subcutaneous fat stranding and extremely gas dissecting along fascial planes from neck, chest, abdomen and pelvis to whole left leg (Figure 1B). According to the clinical presentation and image findings, a diagnosis of necrotizing fasciitis was made. The patient received emergent fasciotomy and post-operative recovery was uneventful.

Necrotizing fasciitis is a highly lethal infection which can be rapid spreading necrosis of fascia and subcutaneous tissues.\(^1\) Although individuals with diabetes, immunocompromised status and patients with haematological malignancy are particularly at risk, necrotizing fasciitis can also occur in healthy young patients.

In our case, the plain radiograph of left femur demonstrates subcutaneous emphysema and should take necrotizing fasciitis as a major concern. The chest X-ray also shows subcutaneous emphysema and provides clue to clinician for possible air dissection to chest and neck region. CT features include thickening of the affected fascia, fluid collections along the deep fascial heaths and extension of oedema into the inter-muscular septa and the muscles.\(^2\) The CT scan is very useful for surgeons to make early decision to explore and debride the involving area. The mortality rate of necrotizing fasciitis may be as high as 30–70%.\(^3\) Treatment of necrotizing fasciitis involves aggressive surgical debridement and the administration of antibiotics.

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References