Diagnostic Images

Gas-forming infections

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The patient

A 89 year old woman was admitted with increasing confusion and difficulty in walking. Her left thigh was swollen, erythematous and had associated crepitus.

Investigations

X-ray of pelvis and bone scan.

Comment

Both clostridial¹ and non-clostridial² 'gas gangrene' may arise without a history of penetrating trauma or recent surgery. In such cases the patient is often immunosuppressed by diabetes or a malignancy such as leukaemia. Clostridia are ubiquitous and are normal inhabitants of the gastrointestinal tract: metastatic gas-forming infection with *Clostridium septicum* is classically associated with occult colonic malignancy.³ Organisms other than Clostridia may produce gas including *Bacteroides*, staphylococci, and certain streptococci, including the anaerobic streptococci.⁴ Our patient, who was a poor anaesthetic risk, made a slow but complete recovery after her thigh discharged 500 ml of sterile pus while she was under investigation and receiving antibiotics. Despite the success of this case, most authors conclude that the management of both clostridial and non-clostridial gas gangrene is with prompt surgical exploration and excision of the necrotic tissue, possibly combined with hyperbaric oxygen.

Figure 1 Pelvic X-rays show extensive gas in the soft tissues of the left thigh in relation to a four-hole dynamic hip screw which was inserted without complication for an intertrochanteric fracture, 18 months previously.

Figure 2 (a) Blood pool phase of a three-phase bone scan showing hyperaemia of the upper quadriceps, joint capsule, and mid-third of femur consistent with soft tissue infection. (b) The 3 hour image shows high uptake in the femoral head, greater and lesser trochanters, and mid-shaft of femur consistent with osteomyelitis.

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