Case report

Bilateral gas gangrene of the hand – a unique case

RW Goyal, ABY Ng, RS Bale

Department of Orthopaedics, Royal Preston Hospital, Preston, UK

Gas gangrene is a rare and rapidly progressive process with the propensity for devastating consequences. We report the first case of bilateral gas gangrene of the hand following bilateral middle phalangectomy of the middle fingers.

Key words: Gas gangrene – Hand

Figure 1 AP radiograph of the left hand showing extensive soft tissue gas.

Figure 2 Oblique radiograph of the right hand.

Correspondence to: RW Goyal, Orthopaedic Specialist Registrar, Manchester Royal Infirmary, Oxford Road, Manchester M27 4HA, UK. E-mail: ravi.goyal@ukgateway.net

A 47-year-old man was admitted complaining of pain and swelling in both hands for the last 3 days. He had previously had bilateral middle phalangectomy 2 weeks before as a result of vascular disease. He suffered from chronic renal failure, IDDM and peripheral vascular disease. Although afebrile, his hands were warm, erythematous, tender and showed evidence of crepitus in conjunction with fluctuant areas. His white cells were raised ($37.1 \times 10^9/l$, neutrophilia) and radiographs were taken (Figs 1 & 2). He was taken to theatre immediately where a left mid-forearm amputation and the radial three fingers of his right hand were amputated. Muscle necrosis and pus was evident and microbial investigation revealed the presence of anaerobic, gas-forming, Gram-negative bacilli. The patient was commenced on appropriate antibiotics and recovered from the episode. Function of the right hand was maintained by the remaining thumb and little finger.

Discussion

Historically, gas gangrene has largely been associated with battlefield injury; however, in the civilian population, cases

are often seen following trauma or surgery. Antecedent procedures such as biliary or intestinal surgery or in those patients with vascular insufficiency may increase the relative risk. Hydrogen peroxide irrigation has been implicated.¹ Not all gas-forming infections are secondary to *Clostridium* infection. In these instances, mixed gas-forming bacteria are often seen.

This is the first case of bilateral gas gangrene of the hand complicating middle phalangectomy and places emphasis on the importance of local wound conditions in the pathogenesis of the infection namely, hypoxic tissue, vascular insufficiency and potential co-existent microbial infection allowing replication of vegetative forms of the species and the subsequent elaboration of toxin.² The case also demonstrates that if debridement is required, regardless of the indication, it must be complete and thorough.

References

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