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CASE CORRESPONDENCE

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Gluteal abscess following intramuscular injection of dissolved biperiden tablets

Introduction

Most anaerobic infections occur in traumatised tissues. Frequently, the causative agents are streptococci and staphylococci (1). Infections caused by local injections are quite common (2–6). People on chronic medication and illicit drug abusers are the groups at high risk for soft tissue infections following local injections (7–10).

Our case is a chronic psychotic patient who injected himself oral biperiden (Akineton®) tablets intramuscularly after mashing and mixing them in tap water and had gluteal muscle abscesses. To our knowledge, there is no similar case in the literature.

Case report

A 52-year-old man with chronic psychosis applied to our emergency service with swelling and pain in his gluteal region for 1 week. His history revealed that he injected himself 60 biperiden tablets, which he had been using orally for his chronic illness, with a syringe into both of his gluteal regions intramuscularly after breaking the medicine into pieces and mixing them in tap water, because he thought that this would be more effective. His background revealed that he had chronic psychosis since 1977 and was using antipsychotic drugs and biperiden tablets. It was learnt that he hadn't been going to his routine psychiatry controls for the last 3 years.

The patient's blood pressure was 115/80 mmHg, his pulse rate was 95 beats/min and rhythmic, his respiratory rate was 18/min, his body temperature was 37.8 °C and his arterial oxygen saturation was 97%. The patient did not have any previous organic disorders.

On physical examination of his site of primary complaint, firm, tender swellings at an approximate size of 10 × 12 cm with local hyperaemia and heat were found on both gluteal regions. Other systemic physical examination was normal. On laboratory studies of the patient, white blood cell was 14.200/mm^3, haemoglobin was 11.3 mg/dl, haematocrit was 33.7%, platelet was 913.000/mm^3, alkaline phosphates were 534 U/l and mildly elevated hepatic function tests (aspartate aminotransferase: 45 U/l, alanine aminotransferase:63 U/l) were found. Electrolytes, renal function tests, blood glucose and urine tests were normal.

Superficial ultrasoundography of both gluteal regions revealed bilateral diffuse collections among the muscles reaching up to 5.5 cm thickness on the left side and 3.5 cm thickness on the right side. Computerised tomography of gluteal regions was performed to identify the distribution of the collections consistent with abscess, which showed abscess formations in both gluteal muscles and alterations of density in adjacent subcutaneous tissues secondary to inflammation. (Figure 1).

In the emergency room, the material (debris) aspirated for diagnostic purposes from the endurating sites of gluteal region was sent to microbiology laboratory for microscopic examination and culture growth. The culture growth was reported as *staphylococcus lugdunensis*, and *staphylococcus aureus* were grown. The first doses of the antibiotics were given to the patient in the emergency room, and he was hospitalised in general surgery clinic for operation. Patient was operated by general surgery staff for abscess drainage, and overall 1.5 l of debris material was evacuated from both gluteal regions. He was followed up by daily wound dressings and antibiotic treatment and was discharged on postoperative third day to continue his daily follow-up in outpatient clinic, because his wound was healed and his symptoms disappeared. The patient was consulted to psychiatry during his hospitalisation period

Figure 1 Patient's CT scan showing 'gluteal muscle abscess'

and was diagnosed as 'chronic psychosis and psychotropic abuse'.

Discussion

Soft tissue infections include superficial lesions of epidermis (such as impetigo, erysipelas and fronculitis), lesions involving dermis and a portion of subcutaneous fatty tissue (such as cellulitis and abscess) as well as lesions involving superficial and deep fascias of subcutaneous fatty tissue (necrotising fasciitis) (2–4). Diagnosis and treatment of skin and soft tissue infections become harder, as depth of infection increases (3–6).

The largest risk group is constituted by chronic drug users who apply the medication in an unsuitable non-sterile medium, as in our case (4,7–10). Skin and soft tissue infections are the commonest cause of hospital admission among drug abusers. Cutaneous and subcutaneous abscesses arise particularly in chronic drug users preferring subcutaneous or intramuscular route, as they cannot take drugs via IV route.

Callahan et al. (3) investigated illicit drug users for 5 years and diagnosed cutaneous abscess in 30 patients. Despite wide debridement and intense antibiotic treatment, eight patients died, five patients required amputation of the extremity and skin grafting. Simmen et al. (10) performed a prospective study in drug abusers and reported that most of the microorganisms which have grown inside the abscess are staphyllococcus and streptococcus, and penicilline-resistant antibiotics are still the best first choice. Bergstein et al. (7) found that the abscess formations in injection site are usually together with complicated infections in illicit drug users. They were given IV antibiotics after performing simple incision and drainage to all patients and reported that anaerobes and gram-stain-positive cocci were grown up from the wound cultures. Henriksen et al. (8) investigated 89 drug abusers who have soft tissue infections around the injection sites. They found 58 superficial abscess, 27 deep abscess, 57 cellulitis, one purulent arthritis, one tenosynovitis and one incomplete abscess formation. They treated the patients with appropriate antibiotics for streptococcus, staphylococcus and anaerobes, according to the grown cultures.

Similar to other studies, the grown microorganisms from the sample taken from the wound were staphylococcus species in our case; complete recovery without complications was obtained with appropriate antibiotic treatment, surgical drainage and daily wound dressing. We did not find a case similar to ours that have abscess formation following intramuscular injection in the literature, and the most striking difference in our case was that the patient injected his tablets which he was supposed to take orally via intramuscular route after meshing and mixing them with tap water. Our opinion is that the causes of abscess formation were body reaction to inappropriate way of application of the drug, besides a suitable medium for infection created by non-sterile tap water.

The situation had become more serious, because the patient did not apply to hospital for his underlying psychiatric illness, until the septic symptoms such as pain, swelling, fever and sweating became overt.

Conclusion

Surgical anaerobic infections can be resistant to treatment or even lethal because of many different reasons. Patients with psychiatric illness, those on chronic medication and illicit drug users are particularly the population at risk. Presentation to emergency services with drug abuse is quite frequent. A detailed history taking and a complete physical examination by emergency physicians is fundamental in such patients. Physical examination should be made by paying special attention for searching puncture wounds, scars, skin and soft tissue infections in these patients.

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