Case Report

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Mycobacterium kansasii olecranon bursitis

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A case is reported of a post-traumatic olecranon bursitis caused by *Mycobacterium kansasii* following an injury sustained in a public swimming pool. It responded to surgical debridement and combined rifampicin, isoniazid, pyrazinamide and ethambutol antimicrobial therapy. A literature search was performed and a treatment regimen for this uncommon condition is suggested.

Case report

A 59-year-old male with no pre-existing risk factors for tuberculous disease sustained a 2 cm laceration over his right elbow whilst at a public swimming pool. He developed an olecranon bursitis and was given a course of oral flucloxacillin and subsequently had the bursa aspirated and injected with a steroid. When the bursa ruptured he had a formal surgical excision and the specimen was sent for microbiological and histological assessment.

Two weeks post-operation it was noted that the wound had not healed and had continued to ooze. Histology of the specimen showed an acute and chronic inflammatory infiltrate, focal micro-abscess and granulomas with Langerhans-type multinucleated giant cells, and an acid-fast bacillus was identified on Ziehl–Neelsen stain. An atypical environmental mycobacterium was suspected, so he was started on a 6-month quadruple therapy regimen of rifampicin, isoniazid, pyrazinamide and ethambutol.

Our local mycobacterial reference laboratory (Regional Centre for Tuberculosis Bacteriology, Public Health Laboratory Service, Dulwich, UK) cultured the samples on Lowenstein–Jensen medium incubated at 37 and 25 °C and assessed its photochromogenic properties. The organism was identified as *Mycobacterium kansasii*.

When reviewed at 1 year, his elbow wound had completely healed and there was no sign of recurrence.

Discussion

The olecranon bursa is a common site for infectious, traumatic and inflammatory bursitis. *Staphylococcus aureus* is isolated in up to 90 % of infective olecranon bursitis; other organisms encountered include group A streptococci, anaerobes, parasites and mycobacteria (McNab, 2002).

In orthopaedic practice, mycobacteria (atypical and tuberculous) are well known to cause superficial infection, tenosynovitis, synovitis, septic arthritis and osteomyelitis, and can mimic rheumatoid, sarcoid and gout. Several

atypical mycobacteria have been associated with olecranon bursitis in man and include *Mycobacterium asiaticum*, *Mycobacterium xenopi*, *Mycobacterium goodii* and *Mycobacterium szulgai*. The *M. asiaticum* infection responded to drainage alone, but combined surgical debridement and antimycobacterial was recommended for the *M. szulgai* and *M. goodii* bursitis (Dawson *et al.*, 1995; Friedman & Sexton, 2001; Maloney *et al.*, 1987; Rutten *et al.*, 1998).

Atypical mycobacteria surround us in the environment, and inoculation with atypical mycobacteria can follow skin abrasions and lead to both cutaneous and deeper soft-tissue infection. *Mycobacterium fortuitum* and *Mycobacterium chelonae* can infect skin and soft tissues after trauma or surgery, and *Mycobacterium marinum* causes local cutaneous infection following skin trauma in swimming pools or fish tanks: ‘fish fancier’s finger’ (Collins *et al.*, 1985). Aquatic habitats as varied as sea water, fresh drinking water and hospital water supplies host atypical mycobacterial species, including *M. kansasii*, *M. marinum*, *M. xenopi*, *M. chelonae*, *M. fortuitum*, *Mycobacterium avium* and *Mycobacterium intracellulare*, and *M. scrofulaceum* (Collins *et al.*, 1984).

Systemic or respiratory disease caused by *M. kansasii* is confined almost exclusively to the immunosuppressed. *M. kansasii* soft-tissue and joint infection is rare, and also has a higher incidence in the immunosuppressed, with seven of the ten cases of *M. kansasii* septic arthritis reported in France between 1992 and 1997 being in immunosuppressed patients (Bernard *et al.*, 1999). Joint infection with *M. kansasii* can cause either a monoarthritis or a destructive polyarthritis (Bouza *et al.*, 1998; DeMerieux *et al.*, 1980; Girard *et al.*, 1973).

There are no treatment guidelines for the treatment of *M. kansasii* soft-tissue infection in the literature. A review of the literature has shown that both conservative and operative therapies have been used successfully in the management of ‘atypical mycobacterial’ soft-tissue infections. The Subcommittee of the Joint Tuberculosis Committee of the British Thoracic Society (1999) guidelines on *M. kansasii*

suggest that infected lymph nodes should not be aspirated but excised, and 9 to 24 months of rifampicin and ethambutol prescribed with the addition of a macrolide if the condition is not responding to initial treatment. They note that there is insufficient evidence about the management of *M. kansasii* at other sites, and make no mention of surgical debridement of other soft-tissue *M. kansasii* infections.

Chow *et al.* (1987) give more general advice on soft-tissue mycobacterial infections of the hand and wrist. These authors suggest that treatment with drugs alone is appropriate, unless steroids have been injected, in which case they advocate surgical debridement and appropriate antibiotics. Grange & Yates (1986) recommend early contact with the local Health Protection Agency Mycobacterium Reference Unit (formerly the Public Health Laboratory Service) for specialist advice and state that *M. kansasii* is usually sensitive to a combination of isoniazid, rifampicin and ethambutol for 12 to 24 months. The Sub-committee of the Joint Tuberculosis Committee of the British Thoracic Society (1999) recommends early contact with respiratory physicians, as they are familiar with using and monitoring anti-mycobacterial drugs with their unwanted side-effects.

Conclusion

M. kansasii is a rare cause of bursitis. There is little evidence on efficacy of treatment regimens in the literature. The case we report responded to thorough surgical debridement and systemic antituberculous chemotherapy. In our practice we request mycobacterial testing in any case that has any suspicious features in history, examination or operative findings. We would recommend both surgical debridement and combined antituberculous medication, with involvement of a respiratory physician and the local Health Protection Agency Mycobacterium Reference Unit, as treatment for *M. kansasii* bursitis.

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