Case report

Septic arthritis due to *Pasteurella multocida* complicating rheumatoid arthritis

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SUMMARY A patient with rheumatoid arthritis treated with corticosteroids developed a septic arthritis of her right knee. She had been bitten on her right leg by her pet cat 2 weeks earlier. *Pasteurella multocida*, resistant to penicillin, was isolated from the septic joint and from the oropharynx of the cat. The arthritis was successfully treated with ampicillin. No attempt to eradicate the organism from the cat was made because of the expectation of early recolonisation.

Case report

A 64-year-old woman with a 3-year history of sero-positive, erosive, rheumatoid arthritis was admitted for a carpal tunnel release operation. She was on aspirin, alcofenac, and prednisone. Two days later she developed a high fever with malaise, culminating in severe pain in her right knee. The knee was hot and tender, with swelling extending from the joint to the lower tibia, where there were 2 small dry wounds. These had been caused by a bite from her pet cat 2 weeks earlier. Purulent fluid was aspirated from the right knee. Gram stain showed numerous pus cells and Gram-negative coccobacilli. Horse-blood-agar plate culture yielded *Pasteurella multocida*. Blood cultures were sterile. The white blood count showed a moderate polymorphonuclear leucocytosis and lymphopenia. A fasting glucose was normal. X-ray of the knee showed only the effusion.

Antibiotic therapy was begun with flucloxacillin and sodium fusidate, but when bacteriological results became available it was changed to ampicillin 500 mg 4 times a day, with further clinical improvement. The cultured organism was sensitive to ampicillin, cephalixin, tetracycline, and cotrimoxazole, and resistant to penicillin G, fusidic acid, and cloxacillin. The knee was rested in a back slab splint. After 2 weeks full mobilisation was gradually achieved. With the isolated organism as antigen titres of agglutinating antibody increased to a

maximum 3 weeks after onset. Repeat x-ray of the knee showed no evidence of destructive change. Ampicillin was continued for 3 months.

The likely source of infection was confirmed when culture of a swab from the oropharynx of the patient's cat grew the same organism—*P. multocida*. The cat was found another home.

Discussion

Most dogs, cats, and many other animals carry *P. multocida* in their mouths, and it is the commonest organism isolated from wounds caused by animal bites (Tindall and Harrison, 1972). Infections are often of a minor and local nature, but may produce regional lymphadenopathy or rarely systemic toxicity. Four similar reports have been found in which septic arthritis occurred other than by direct inoculation into the joint (Barth *et al.*, 1968; *British Medical Journal*, 1972; Griffin and Barber, 1975; Maurer *et al.*, 1975). Apart from 1 unspecified case, all patients were known to have rheumatoid arthritis and to be taking corticosteroids. In 2 cases a prosthesis was in the infected joint.

The organism's usual sensitivity to penicillin has led to suggestions that this is the drug of choice and should be given prophylactically after animal bites (Tindall and Harrison, 1972; Barth *et al.*, 1968). However, the organism found in our patient was resistant to penicillin. The decision to give prolonged antibiotic therapy is supported by a reported relapse which occurred after only 3 weeks of treatment (Barth *et al.*, 1968). Eradication of the organ-

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ism from the healthy cat was not attempted, since the expectation was that early recolonisation would occur. This difficulty of recolonisation is exemplified by a case in which a previously treated cat caused a second *P. multocida* infection by a further bite a year later (Barth *et al.*, 1968). Patients with rheumatoid arthritis are unusually susceptible to bacterial infection, which may be increased by corticosteroid therapy (*British Medical Journal*, 1976). We suggest that patients could avoid the slight risk of serious *P. multocida* infection by avoiding contact with certain domestic pets.

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