CASE REPORTS

1. RAT BITE FEVER CAUSING SEPTIC ARTHRITIS AND OSTEOMYELITIS IN A YOUNG MAN

Tochi Adzie1, Mary Gayed1 and Jaya Ravindran1

1Department of Rheumatology, University Hospitals Coventry and Warwickshire, Coventry, UK

Background: Classic rat bite fever is a systemic illness generally characterized by fever, rash, sore throat, headache, vomiting, myalgias and polyarthralgias. It is caused by infection with either Streptobacillus moniliformis or Spirillum minus.

Methods: We report a case which is, to our knowledge the first reported case of streptobacillus moniliformis septic arthritis with associated osteomyelitis in an adult.

Results: A 23 year old Polish gentleman who was the owner of three rats presented with a 5 day history of malaise, feverishness, sore throat, headache, rash with pain and swelling of his ankles, right elbow and right knee. Examination revealed a rash in his extremities including palms and soles with pustular, maculopapular and petechial components. He had effusions in the right knee and left ankle and swelling of his right second metacarpophalangeal joint. Initial laboratory investigations revealed CRP 211 ESR 36 ferritin 417 neutrophils 7.89. RF, CCP antibodies, ANA, ANCA, immunoglobulins, complements, ds DNA were all negative. Blood cultures were negative and joint aspirate of the right knee was also negative. Skin biopsy revealed mild non-specific perivascular inflammation within the subcutis. Patient was initially treated with a broad spectrum antibiotic. Repeat joint aspirate was carried out from left ankle and PCR with bacterial 16S rRNA gene sequencing was positive for Streptobacillus moniliformis. MRI of the left ankle showed considerable marrow oedema and a moderate thick walled effusion consistent with a septic arthritis and associated osteomyelitis. Antibiotic regime was changed to i.v. benzylpenicillin and clinical improvement accelerated. He was switched to oral penicillin after 2 weeks and made a good recovery. Streptobacillus moniliformis is a Gram-negative bacillus that causes a syndrome characterized by fever, rash, and arthralgias, often following a brief incubation period of 10 days. Complications include endocarditis, myocarditis, pericarditis, septic arthritis, meningitis, overwhelming sepsis, vasculitis, and abscesses in virtually any organ. It has classically been associated with exposure to wild rats and laboratory rats however incidence has increased in recent years with the increased prevalence of domesticated rats. There has been one case reported of S. moniliformis septic arthritis associated with an osteomyelitis in a boy aged 22 months. To our knowledge, our case is the first of osteomyelitis associated with streptobacillus septic arthritis in an adult. It is also the first case in which histology has been reported from a skin biopsy in such a patient.

Conclusion: Clinicians should consider rat bite fever in the differential diagnosis of an unexplained febrile illness in patients reporting rat exposure especially if a maculopapular rash is present and the patient has asymmetrical oligo- or polyarthritis. Our case also highlights the need to be aware of osteomyelitis as a possible complication in patients with S. moniliformis septic arthritis.

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