

## Case report

# *Listeria monocytogenes* septic arthritis following intra-articular yttrium-90 therapy

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**SUMMARY** *Listeria monocytogenes* is a rare cause of septic arthritis, which usually occurs in a host compromised by systemic illness. Intra-articular irradiation with yttrium-90 is generally free of complication. We report a case of intra-articular sepsis of the knee joint by *Listeria monocytogenes* acquired under unusual circumstances.

A 77-year-old man with a 40-year history of seropositive rheumatoid arthritis developed a persistent effusion in the right knee despite several aspirations and corticosteroid injections. Yttrium-90 silicate (5 mCi) was injected into the knee by an aseptic technique, the joint was immobilised in a plaster-of-Paris cylinder, and he returned home the same day. The cylinder was removed after 48 hours.

Three weeks later he returned complaining of further pain, swelling, and stiffness in the knee. He was afebrile, and general examination was unremarkable. Clinically the right knee appeared infected, and joint aspiration revealed purulent fluid with scanty Gram-positive rods. X-ray demonstrated destruction of the tibial spine and femoral intercondylar lucencies.

At arthrotomy copious green pus was found covering exuberant synovium and multiple adhesions. The joint was irrigated and chloramphenicol powder introduced before closure. Joint fluid culture grew *Listeria monocytogenes*, and synovial biopsy showed increased plasma cells and lymphocytes. After 10 days of intravenous ampicillin the patient made a good recovery and was discharged on a six-week course of oral ampicillin.

No source of infection could be identified, and no other patient treated on that day with yttrium-90 injection was affected. It later transpired that the patient visited a farm on the day after the injection

where his granddaughter kept her horse, and had rested on the manure heap.

Five months later he was readmitted with cellulitis of the same leg arising from a foot ulcer. Ampicillin and flucloxacillin were given intravenously, but blood cultures were sterile. He also complained of recent increasing angina pectoris. While in hospital he suddenly developed atrial fibrillation and died of acute pulmonary oedema.

## Discussion

*Listeria monocytogenes* is a small Gram-positive rod occurring in the soil and animal excreta. Meningitis and bacteraemia account for most cases, usually in the presence of underlying disease such as malignancy, diabetes, or rheumatoid arthritis. Neonatal sepsis, endocarditis, pneumonia, conjunctivitis, urethritis, and osteomyelitis also occur.<sup>1</sup>

Two reported cases of *L. monocytogenes* septic arthritis involved the ankle and knee joints in patients with diabetes and rheumatoid arthritis respectively.<sup>2,3</sup> In the second this was successfully treated with ampicillin and gentamicin.

Our patient developed a septic arthritis following an intra-articular yttrium injection. The subsequent visit to a farm seemed to be the only source of infection. Day case admission for intra-articular radiotherapy is not associated with more complications than the more usual four-day admission.<sup>4</sup> Presumably a bacteraemia lead to localisation of the organism in the inflamed synovium of the knee.

**References**

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