Case report

Pyogenic arthritis presenting as a ruptured popliteal cyst

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Pyogenic arthritis may be difficult to diagnose in patients with rheumatoid arthritis (Kellgren *et al.*, 1958), with resulting delay in initiating appropriate therapy. The consequence may be death (Editorial, 1976) or poor function in the affected joint. A popliteal cyst rupturing into the calf also presents problems in diagnosis, being confused with deep venous thrombosis (Dixon and Grant, 1964). We wish to report a case of septic arthritis in the knee presenting with a ruptured popliteal cyst into the calf before diagnosis was established. The case was of additional interest in that septic arthritis was due to an unusual organism and followed hip replacement surgery.

Case report

A 48-year-old man was admitted for right hip arthroplasty in May 1977. He had suffered from seropositive rheumatoid arthritis for 12 years, but apart from a short course of corticosteroids 5 years previously he had had no other suppressive forms of therapy. One year before his operation he had a left orchidectomy following an acute epididymo-orchitis; urine at that time contained pus cells, but no organism was grown.

A low friction arthroplasty was carried out uneventfully, and a swab from the acetabulum at operation produced no growth of organisms. Five days postoperatively his left knee became more swollen than usual, but he was discharged 16 days after the operation. A popliteal swelling then developed, and he noticed sweating at night. Twenty-five days after the operation there was a sudden onset of pain and swelling in the left calf with diminution of the swelling in the left knee. Five days later he was readmitted with a temperature of 37.5°C, and obvious pus was aspirated from his

left knee. Gram-negative bacilli were seen on direct smear, and a significant growth of *Bacteroides* was produced on culture. His full blood count at this stage revealed haemoglobin 9.9 g/dl, white cells $14.7 \times 10^9/l$, ESR 112 mm in 1 hour.

His septic arthritis was treated with intravenous ampicillin, a rest splint for the knee, and daily aspiration of pus from the synovial cavity. The swelling of his knee and temperature settled over 5 days, but the calf cyst slowly increased in size. Three weeks after the diagnosis of his septic arthritis the cavity, which extended from mid calf to mid thigh, was explored and cleared of altered blood and pus. This pus again produced a growth of *Bacteroides*, though pus from the anterior part of the knee had been sterile for 2 weeks. With repeated cleaning and packing the wound slowly granulated and healed, and physiotherapy produced a range of movement from 5° to 80°, which the patient stated was similar to the range of movement before his right hip arthroplasty. To date his hip has presented no problems.

Discussion

Rupture of a popliteal cyst in a patient with rheumatoid arthritis may cause pain and swelling in the calf, which may make diagnosis from a calf vein thrombosis difficult. This presentation in a case of septic arthritis is exceedingly rare and may have been one reason for the long delay before diagnosis, but in spite of this the patient had a satisfactory outcome from treatment. Systemic antibiotic therapy quickly controlled the pyrexia and sterilised the fluid in the anterior compartment of the knee without sterilising the calf cyst, which subsequently required surgical drainage.

Although previous cases of *Bacteroides* septic arthritis are described, it is rare (Ziment *et al.*, 1969), but being an anaerobic organism it has to be carefully looked for in such cases. Patients with rheumatoid

arthritis have an increased susceptibility to infection, but there were no other factors such as immuno-depressant drugs to explain this patient's septic arthritis. While he had no extra-articular sites of infection, his past history of an acute epididymo-orchitis may be relevant, and the relationship to his arthroplasty 5 days previously is of interest, possibly in some way activating a previously dormant site of infection.

References

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