PERSISTENT SYNOVIAL FISTULA AFTER ARTHROSCOPY: IS TITANIUM SYNOVITIS A RISK FACTOR?

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Synovial fistulae after arthroscopy and titanium-induced synovitis of the knee are both uncommon. We report a case in which a persistent fistula led to frank infection after a diagnostic arthroscopy during which a florid titanium-induced synovitis of the knee had been discovered. We are not aware of any previous reports of this association.

Case report. A 66-year-old man was admitted with pain and locking of his left knee two years after insertion of a Brigham unicompartmental prosthesis for medial compartment osteoarthritis. The pain was worse around the patella and exacerbated by movement and weight-bearing. Radiographs were satisfactory apart from the presence of a cement loose body, and the WBC and ESR were normal. The provisional diagnosis was either mechanical impingement due to the loose body or patellar maltracking.

Arthroscopy showed a florid black-stained titanium-induced synovitis with a large quantity of metal debris in the synovial fluid. The polyethylene of the tibial component was completely worn, allowing metal-to-metal articulation at the tibiofemoral joint. The central part of the metal tibial tray had also worn through (Fig. 1). Synovial biopsy showed a giant-cell granulomatous reaction due to titanium oxide.

A decision was made to revise the knee arthroplasty in a few weeks, but the medial parapatellar portal failed to heal and became a persistent and troublesome synovial fistula (Fig. 2). This discharged black-stained sterile fluid for over three months and was complicated by a frank staphylococcal septic arthritis. Treatment by joint lavage and long-term antibiotic therapy was required before the infection settled. The knee revision was eventually performed using antibiotic-loaded cement. A blood test one week later showed a markedly raised titanium level of 420 µg/l (normal ≤ 8 µg/l) indicating titanium metallosis.

Discussion. The incidence of persistent synovial fistula after arthroscopy is very low. Bamford et al (1993) reported only one case in 8500 arthroscopies. In our patient a large amount of titanium debris had been generated by the wearing of the chrome-cobalt femoral component of the Brigham prosthesis through the titanium tibial tray. The chronic effusion caused by the titanium particles may have resulted in persistent leakage of fluid which prevented healing, or the particulate titanium may have acted as a wound irritant. Whatever the exact mechanism, we are not aware of any previous report of an association between metal-induced synovitis and fistula formation.

Without arthroscopy, a high index of suspicion is required to make the diagnosis of metal-induced synovitis and fistula formation. Other disorders, such as aseptic loosening, are a much more common cause of pain after knee arthroplasty. Weissman et al (1991) found that the presence of a dense line outlining a portion of the capsule (the so-called metal-line sign) was
ANEURYSMAL BONE CYST IN MONOZYGOTIC TWINS: A CASE REPORT

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Aneurysmal bone cysts (ABCs) are uncommon benign bone tumours with a peak incidence in the second decade of life. They occur most frequently in long bones, but have been reported in most areas of the skeleton (Vergel De Dios et al 1992). Their aetiology remains uncertain, as they may arise spontaneously or in conjunction with other benign bone lesions or after trauma. We report a case of an ABC in two monozygotic twins, suggesting a hereditary association.

Case reports. The first twin presented at 20 years of age with a gradual onset of aching of the right leg; there was no history of trauma. Radiographs revealed a lytic lesion in the proximal fibula (Fig. 1a) which had the appearance of an ABC on CT and showed increased activity on Tc scintigraphy. Excision biopsy was performed and histological examination (Fig. 1b) showed a largely cystic ABC which had focally destroyed cortical bone with a thin shell of reactive bone at its junction with overlying soft tissue. The inner membrane of the cyst was formed by disrupted fibrocellular septae comprising a mixture of fibroblastic spindle and multinucleate giant cells. The patient made an uneventful recovery with no evidence of recurrence at 18 months.