

Non-steroidal hip arthropathy: case histories and differential diagnosis

S Kakar, JA Jeffery, G Bentley

CASE REPORT 1

A 74-year-old male patient was admitted for elective hip replacement surgery. X-rays revealed dramatic collapse and deformity of the femoral head over a 13-month period (Figures 1 and 2). He had experienced progressive hip discomfort during an 18-month period before surgery and was taking diclofenac (50 mg three times a day) regularly for discomfort. Despite analgesia, his walking distance had deteriorated from 800 to 100 metres while awaiting surgery.

Preoperative hip aspiration was performed to exclude infection. Histological and microbial analysis of the femoral head and synovium at the time of surgery excluded inflammatory, infective, neoplastic and avascular causes.

CASE REPORT 2

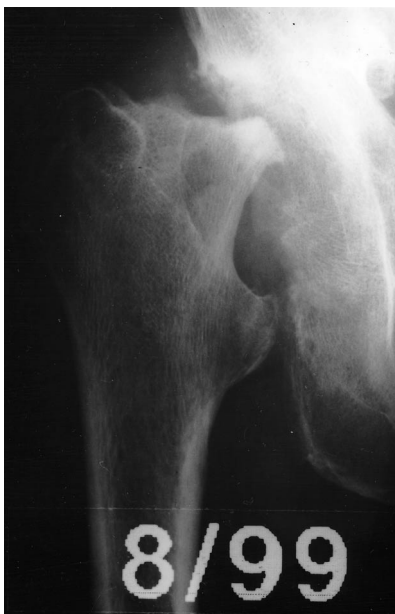
A 84-year-old male patient presented to clinic with a 2-year history of hip discomfort. X-ray findings were compatible with primary osteoarthritis (Figure 3). He had been prescribed diclofenac (50 mg three times a day) for hip discomfort and continued with this while awaiting surgery. By the time of admission, his walking distance had significantly declined from 600 to 100 metres and required 2 walking sticks. Inflammatory markers, urate and venereal disease research laboratory (VDRL) measures were within normal limits on blood tests.

Preoperative X-ray showed marked deterioration of the hip joint (Figure 4). No abnormal inflammatory findings were seen at the time of hip replacement surgery. Histological analysis of the femoral head showed characteristic features of degenerative joint disease with no evidence of infarction.

Figure 1. X-ray of a 74-year-old male patient who had been aware of hip pain for 6 months.



Figure 2. Severe radiological deterioration over the following 13 months.



INTRODUCTION

Occasionally a rapidly progressive, destructive arthropathy of the hip joint is seen in otherwise well patients. The dramatic radiological appearance of such changes should prompt full investigation. In patients in whom these tests are inconclusive, it has been suggested that the analgesic effect of non-steroidal medication masks any pain which might indicate acceleration of degenerative arthropathy (Soloman, 1973). The two patients described illustrate rapid radiological deterioration of the hip joint over a 1-year period. The investigation of rapidly destructive hip arthropathy and the diagnosis of 'non-steroidal hip' are discussed.

DISCUSSION

Rapidly destructive arthropathy of the hip is an indication for full investigation before surgery. Of the possible causes, non-steroidal hip should be made as one of exclusion. The 'surgical sieve' serves as a useful framework to consider other possible aetiologies:

1. Infective (e.g. tuberculosis)
2. Inflammatory (e.g. rheumatoid arthritis)
3. Iatrogenic (drugs, radiation)
4. Idiopathic
5. Traumatic
6. Metabolic
7. Neoplastic.

Septic arthritis may present as a rapidly destructive hip arthropathy in the elderly and a high index of diag-

Dr S Kakar is Senior House Officer in Orthopaedics, **Mr JA Jeffery** is Specialist Registrar in Orthopaedics and **Professor G Bentley** is Professor of Orthopaedics, The Institute of Orthopaedics, The Royal National Orthopaedic Hospital, Stanmore, Middlesex HA7 4LP

Correspondence to: Dr S Kakar

nostic suspicion is required (Knight et al, 1996). Joint replacement surgery would be absolutely contraindicated in the presence of active infection. Raised inflammatory markers may be indicative of either infection or an inflammatory arthropathy and baseline tests should include assays for erythrocyte sedimentation rate, C-reactive protein, rheumatoid factor, urate assays and Mantoux testing. If doubt remains, aspiration of the hip for microbial analysis is advised (Vincent and Amirault, 1991).

The femoral head has an 'end organ' blood supply which renders it susceptible to ischaemic necrosis from a number of potential causes. Avascular necrosis of the femoral head is potentially reversible in its early stages by surgical core decompression (Ficat and Arlet, 1980). Causes include radiotherapy, steroids, Caisson's disease, alcohol and smoking. Some cases are idiopathic, although occult subcapital femoral neck fractures in the elderly have been suspected.

Advanced avascular necrosis with destruction of the femoral head may require joint replacement. Diagnosis depends upon typical sclerotic X-ray changes with avascular changes seen on magnetic resonance imaging or bone scans.

Figure 3. X-ray of an 84-year-old male patient who had been aware of hip pain for 2 years.



Neoplastic conditions rarely affect the femoral head. They may need to be considered if an unusually destructive arthropathy is seen in conjunction with a 'hot' ^{99m}-technetium bone scan. Core biopsy with a wide bore needle may be needed to confirm or refute this diagnosis and is accurate in 97% of cases (Stoker et al, 1991).

Charcot in 1868 described advanced destruction of the large weight-bearing joints with relatively little discomfort. These changes were originally described in relation to syphilis, but may be caused by any condition affecting the neural pathways in which pain fibres travel. Loss of proprioception is characteristic of a neuropathic joint. Movements are usually well preserved but the joint is unstable. In these instances joint replacement surgery is usually disastrous, with arthrodesis being the preferred option (Johnson, 1967).

It has been suggested that the analgesic effect of non-steroidal medication accelerates the process of degenerative arthropathy in a 'Charcot' type fashion, by removing the protective sensation of 'pain' and allowing increased physical loading on joints (Soloman, 1973). Alterations in drug strength have been shown to affect this process with

Figure 4. Severe radiological deterioration over the following 13 months.



more potent analgesics like indomethacin increasing rates of degradation (Rashad et al, 1989). Despite these concerns, non-steroidal analgesic medication remains the cornerstone for primary treatment of painful degenerative arthritis.

CONCLUSIONS

The diagnosis of non-steroidal hip is one of exclusion from other conditions presenting with similar radiological appearances. Arthritis of the hip remains a common cause of painful disability in the elderly with non-steroidal medication comprising the first-line treatment for this condition. It is therefore important to be aware of this potential side-effect as a cause for arthropathy. **HM**

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Correspondence

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