

Two cases of shoulder joint tuberculosis

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Because of its rarity in Scandinavia, we report 2 cases of skeletal tuberculosis affecting the shoulder joint.

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Tuberculosis has steadily decreased in Finland during the last two decades; moreover, vaccination with the BCG vaccine is still part of the national health care program. In 1987, there were 35 new cases of skeletal tuberculosis, comprising 2.5 percent of all the new cases of tuberculosis (Härö 1988).

Tuberculosis of the shoulder is rare in adults, its differential diagnosis is difficult, and irreparable joint destruction may take place if treatment is delayed.

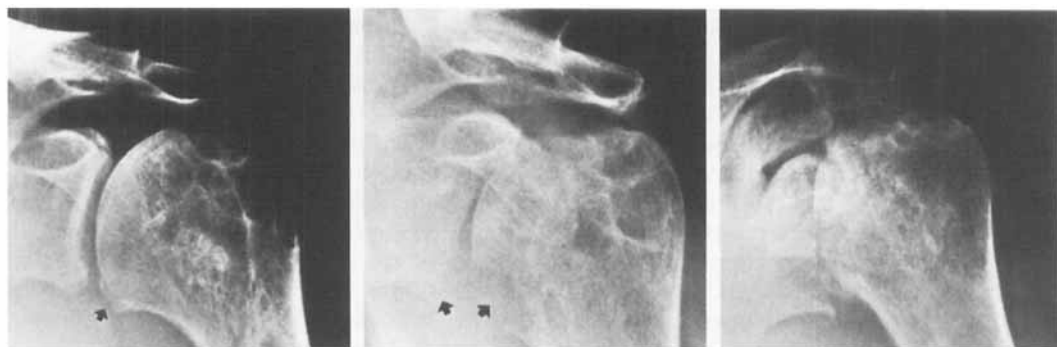
We present 2 cases of tuberculous infections of the shoulder joint.

Case 1

A 51-year old male factory worker was admitted in January 1989 to the Orthopedic Hospital of the Invalid Foundation. His chief complaints were increasing pain and loss of motion of the left

shoulder. Further, he had been unable to do his work for 4 months before admission. In 1980, a Neer acromioplasty had been performed—with a good result—in the same shoulder in another hospital. This patient had no systemic diseases, his consumption of alcohol was moderate, and he had not received treatment with corticosteroids.

Severe restriction, which was associated with pain, was found in the left shoulder joint of an otherwise healthy man. Locally, there was neither inflammation nor synovial effusion. The ESR (Westergren) was 3 mm/h, the leukocyte count $6.8 \times 10^9/L$, and the hemoglobin 14.9 g/dL. Chest x-ray films were normal. Radiographs of the shoulder (Figure 1) suggested chronic purulent arthritis, whereas our radiologist (EV) tentatively suspected tuberculous arthritis. Therefore, the Mantoux test was done, and it was strongly positive. A needle aspiration of the joint yielded nonpurulent fluid with a total white blood cell count of $7,700 \text{ cm}^3$, of which the proportion of polymorphonuclear cells was 0.68.



Nine years before diagnosis.

Four months before diagnosis.

Severe destruction of the shoulder joint 5 months after diagnosis.

Figure 1. Case 1. A 51-year-old man with tuberculosis of the shoulder. Arrows indicate where the tuberculous lesion is most clearly seen. In addition, cysts in the humeral head can be seen.

A microbial culture and staining of the fluid were negative. On the other hand, *Mycobacterium tuberculosis* was isolated in one of the synovial biopsy specimens. Combined antituberculous chemotherapy was started, and this continued for 15 months. However, progression of the disease caused joint destruction and secondary arthrosis of the glenohumeral joint.

Case 2

A 85-year female was admitted to the orthopedic outpatient clinic of the Peijas-Rekola Hospital in June 1990. The patient's general condition was good; she had no systemic diseases and no history of tuberculosis. Five years earlier, she had received a Thompson hip endoprosthesis as a result of a hip fracture. In December 1989, an infection around her right shoulder was initially diagnosed as an infected atheroma, which was incised. Since then, a fistulous infection above the acromioclavicular joint has persisted, and no response to antibiotic treatment has been achieved. When one of the authors (I A-P) saw the patient for the first time, she had lost 5 kg of weight during a 6-month period. There was only minimal active movement in the right shoulder. C-reactive protein was normal, and the ESR (Westergren) was 66 mm/h. Radiographs (Figure 2) revealed destruction of the acromioclavicular joint and osteopenia, and were typical of tuberculosis. The Mantoux test was strongly positive, and a microbial culture obtained from the fistula confirmed *Mycobacterium tuberculosis*. A combination of antituberculous drugs were administered, and there was a good initial response.



Figure 2. Case 2. An 85-year-old man with tuberculosis of the shoulder. The acromioclavicular joint is totally destroyed and the glenohumeral joint is osteoporotic. The fistula above the acromioclavicular joint is visible.

sicca, or dry caries (less than 1 percent of all skeletal tuberculosis cases; Bateman 1975), which is principally a clinically lowgrade, subacute infection.

About 50 percent of all the patients with skeletal tuberculosis do not have any clinical or radiographic evidence of pulmonary tuberculosis (Meltzer et al. 1985). Skeletal involvement may be, as in our 2 cases, the only manifestation of the tuberculosis. And it may behave silently for years before it is detected.

Night pain may be the first symptom at the onset of the disease, which is subsequently followed by loss of function of the glenohumeral joint. In skeletal affections the diagnosis of tuberculosis was delayed on an average of nearly 2 years after the onset of symptoms (Walker 1968). In tuberculosis of the shoulder, an average of 15 months elapsed from the debut of symptoms until a correct diagnosis was made (Richter et al. 1985).

In our 2 cases, the Mantoux test with PPD (tuberculin-purified protein derivative) was strongly positive. Definitively, active tuberculosis is identified by positive cultures from either synovial fluid or tissue samples. Synovial biopsies have been positive in more than 90 percent of the confirmed cases (Razdan et al. 1966, Wallace and Cohen 1976), whereas synovial fluid cultures have been positive in nearly 80 percent of the confirmed cases (Berney et al. 1972, Wallace and Cohen 1976). An open-joint biopsy is generally more reliable, and it can be carried out safely without pyogenic complications or sinus-tract formation (Razdan et al. 1966).

Discussion

Richter et al. (1985) reported 50 cases of glenohumeral joint and 1 case of acromioclavicular joint tuberculosis in their study covering the period from 1955 to 1980. Among 100 patients with bone and joint tuberculosis in Denmark between 1980 and 1984, 6 patients (3 of whom were immigrants) had shoulder involvement (Autzen and Iberg 1988). In 1978, 78, and in 1986, 23 new cases of bone and joint tuberculosis were registered in Finland (Härö 1988).

Two distinct types of shoulder tuberculosis are recognized, the most common type being caries

Acknowledgements

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