MASSIVE OSTEOLYSIS OF THE HUMERUS WITH SPONTANEOUS RECOVERY

REPORT OF A CASE

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An elderly woman presented with a pathological fracture of the right humerus. Progressive dissolution of the shaft of this bone took place over six months. No cause could be established and the patient refused biopsy. With only simple splintage for treatment the humeral shaft gradually reformed and re-ossified over a period of two years. The patient has been under review for four and a half years and no further pathology has come to light. The cause of the osteolysis remains obscure.

A woman aged sixty-seven was referred to hospital in May 1969 with pain in the right upper arm after a minor injury three weeks earlier. The humerus showed mobility about its midshaft, but there was no visible bruising and only minimal swelling. Radiographs showed extensive destruction of bone with pathological fractures (Fig. 1).

Clinical examination and skeletal survey failed to provide any indication of the nature of the lesion. Evidence of malignancy, infection, metabolic or neurological disturbance was lacking.

Investigations—The following laboratory studies were made: except for the raised erythrocyte sedimentation rate none showed significant abnormality. Haemoglobin 12·8 grams per cent; erythrocyte sedimentation rate 30 millimetres in the first hour; packed cell volume 40 per cent; serum alkaline phosphatase was 15·7 King Armstrong units per 100 millilitres; the total serum protein was 6·9 grams per 100 millilitres; albumin was 4·9 grams per 100 millilitres; and the albumin/globulin ratio was 2·4.

Admission to hospital for further investigations was refused, as were any further out-patient investigations other than radiographs. The right humerus was supported in splints and the patient was reviewed at intervals (Figs. 2 and 3).

By October 1969 the distal part of the humerus had largely disappeared but the patient still adamantly refused treatment other than splintage.

In February 1970, nine months after the onset, the patient reported that she had become aware of increasing stability in the arm, and radiographs showed remarkable and progressive improvement (Figs. 4 and 5). Further investigations at this time showed the serum calcium to be 10·6 milligrams per 100 millilitres and the serum alkaline phosphatase to be 13·0 King Armstrong units per 100 millilitres. Haemoglobin was 11·8 grams per cent. Slight anisocytosis as well as occasional target cells were present. The leucocyte count showed 5,000 cells per cubic millimetre: neutrophil cells 49 per cent; eosinophil cells 1 per cent; lymphocytes 50 per cent.

In October 1970 the arm was stable and splintage was discontinued. Bony remodelling and consolidation were complete by July 1971 (Fig. 6), and when the patient was reviewed in January 1973 there had been no recurrence of this pathological process (Fig. 7).

DISCUSSION

Spontaneous dissolution of bone is a rare phenomenon first recorded by Jackson in 1838; over forty cases have appeared in the literature since that time. The most comprehensive review was that of Gorham and Stout in 1955. They described a complete, spontaneous and progressive disappearance of bone to which they applied the term “massive osteolysis”. The condition affects principally adolescents or young adults and is unaccompanied by any constitutional disturbance. Laboratory investigations are normal. The disorder tends to be monostotic and to involve the whole bone; occasionally it extends across neighbouring joints (Poirier 1968).

Bone destruction is seen in a variety of conditions including malignant disease, rheumatoid arthritis, psoriasis and neuropathic disorders. It has been found in association with nephropathy (Torg and Steel 1968) and blood dyscrasias.

The aetiology of “disappearing bone disease” is disputed but Gorham (1960) believed that it is always

Figure 1—Radiograph of right humerus in May 1969, showing extensive destruction and pathological fractures.

Figure 2—Radiograph in August 1969, showing progressive bone destruction. Figure 3—The appearance in October 1969. The whole bone is involved and part of the distal shaft has disappeared.

Figure 4—February 1970. The appearance of the right humerus has improved. Figure 5—October 1970. Further improvement. At this stage splintage was discontinued. Figure 6—July 1971. Reconstitution of bone has taken place. Figure 7—January 1973. Appearance three years and seven months after presentation.
associated with angiomatosis of blood or lymphatic vessels. He showed experimentally the role of active hyperaemia in producing osteolysis.

The patient here reported is now aged seventy-two years. It is four and a half years since her first attendance and although the right humerus is two inches short it has otherwise been fully reconstituted. The destructive process does not appear to have had a malignant origin, nor did it appear to be the result of infection or neuropathy. The humerus at no stage resembled the “sucked candy” appearance radiologically typical of “disappearing bones” (Torg and Steel 1969). Although spontaneous arrest of the condition is recognised, reconstitution to this degree has not been recorded.

On the evidence available from the literature, therefore, this patient does not comply fully with the usual features of “disappearing bone disease”. None the less, no more specific pathology has been identified and biopsy confirmation has not been feasible. Alternatively, some form of vascular abnormality can be postulated, as can spontaneous regression of a metastasis from an undetected primary malignant neoplasm.

REFERENCES


