HODGKIN'S DISEASE OF BONE: A CASE REPORT*

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Gross lesions of bone in Hodgkin's disease are rarely apparent during life and are therefore frequently overlooked. However, bone is very often a site of involvement. Bone lesions are said to develop rarely in acute cases and are associated with chronicity.[1] Dresser and Spencer[2] reported 30 cases with an average duration of 3·5 years from the onset of symptoms to bone involvement and an average survival of 11 months after radiological demonstration of such bone involvement.

Primary osseous disease has been reported,[3-6] but the evidence that it is primary is equivocal.[1,7] Secondary lesions are found in 6 - 23% of cases, the variation in findings apparently being dependent on the care with which the search is made.[1,5,8,9] The incidence of bone lesions is said by Ewing[10] to approach 100%.

Gremmel and Schulk-Brinkman[11] found a 75% incidence with multiple osseous foci in 18 out of 24 cases. Lesions appeared on an average of 1·5 - 2·3 years after onset of disease. Papillon and co-workers[12] reported an incidence of 37 cases with osseous involvement out of 53 patients with Hodgkin's disease. Fisher *et al.*[13] reported an incidence of 25 out of 154 patients, or 16%, of whom 24 had Hodgkin's granuloma and 1 had Hodgkin's sarcoma, while Newall[14] found that bone infiltration producing pain occurred in 30 patients in a series of 392 with Hodgkin's disease.

The sites of predilection for the bones parallel closely those in which red marrow is present; the distribution of Hodgkin's lesions in bone is similar to that of metastases to the skeleton from other malignant conditions (Table I).

TABLE I. DISTRIBUTION OF BONE LESIONS IN HODGKIN'S DISEASE

	Number of cases	
Site of lesions	*Middlesex Hospital, London*[13] *(154 cases in series)*	*Royal Infirmary, Edinburgh*[14] *(392 cases in series)*
Cervical spine	1	25
Dorsal spine	15	
Lumbar spine	15	
Pelvis (including sacrum)	11	10
Ribs	9	10
Femur	5	5 (one patient developed a path. fracture)
Sternum	2	–
Humerus	1	2
Tibia	1	1
Fibula	1	–
Clavicle	1	–
Skull	Nil	Nil

The order of distribution as reported by various workers is similar.[4,5,7-9,13-15]

It is thought that foci of Hodgkin's tissue can start in bone either from spread from the bone marrow (having been conveyed there by the blood stream) or arising in the reticulo-endothelium *de novo*. Infiltration in the marrow can be widespread before the spongiosa or cortex of the bone is invaded, and the lesions become visible radiologically. Almost 100% of patients are said to show disease foci in the bone marrow if a careful search is made.[5,7] Most of these changes are microscopic, but macroscopic lesions are also described. Sternal aspiration will rarely reveal Reed-Sternberg cells, and serial sections taken from several locations are often necessary before foci are demonstrable in the marrow.

CASE REPORT

The patient is a 73-year-old doctor of geology who complained of weakness and loss of weight more than 9 years previously in January 1959. Three months later he presented with cervical, supraclavicular, axillary and inguinal lymphadenopathy; biopsy of a gland from the right supraclavicular area confirmed that it was a Hodgkin's disease. Remission was induced and maintained with cyclophosphamide; during the 8-year period on cyclophosphamide therapy one course of radiotherapy was necessary to treat enlarged glands in the inguinal area. When he relapsed, a further remission was procured until the end of 1967 by the administration of intravenous vincristine. In

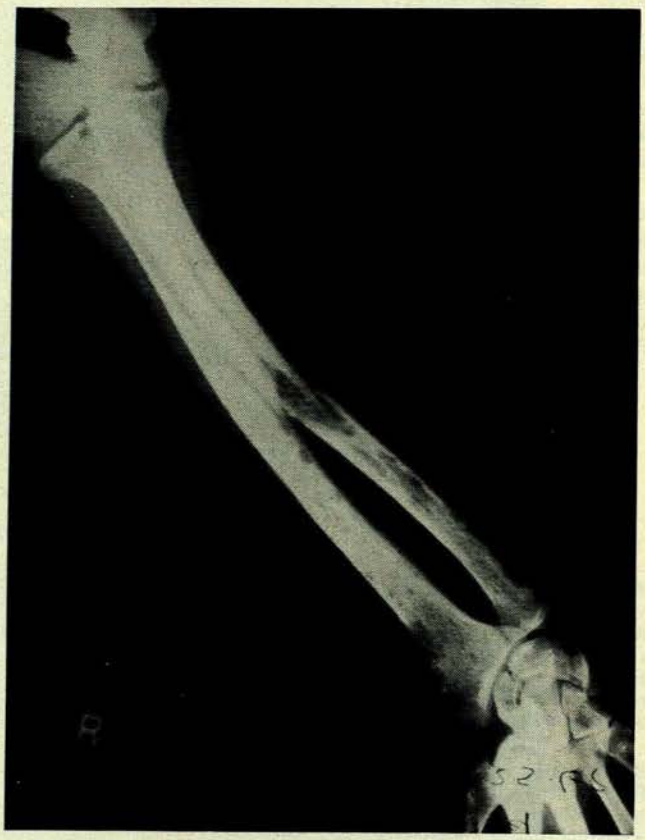

Fig. 1. Radiological appearance of right forearm, with pathological fracture of ulna.

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February 1968 he relapsed with general weakness, progressive anaemia and recurrent lymphadenopathy. A rapidly growing tumour of the left side of the hard palate was surgically removed; histologically this consisted of Hodgkin's tissue. The patient's blood urea, uric acid and alkaline phosphatase were increased above normal values. He further complained of severe pain in the knees and forearms. X-ray examination of the skeletal system revealed extensive involvement of the ulnae, radii, tibiae and fibulae with pathological fractures of both ulnae and the left fibula (Figs. 1 and 2).

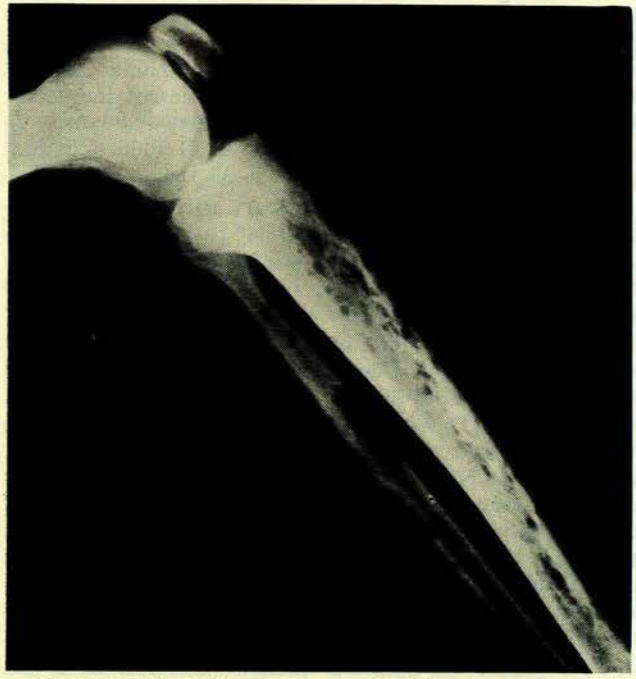

Fig. 2. Radiological appearance of left knee and tibia and fibula. Marked osteolytic lesions and pathological fracture of left fibula (lateral view).

The lymphadenopathy disappeared on administration of intravenous vinblastine, and radiotherapy was given by means of a 220-kV apparatus to both forearms and lower legs. This resulted in moderate partial symptomatic relief. As the patient obviously had extensive and progressive Hodgkin's disease, it was subsequently decided to enter him on an Acute Leukaemia Cooperative Group B study protocol, utilizing serial multiple agent chemotherapy. At this stage his haemoglobin was 11·4 G/100 ml., reticulocytes were 3·8%, he had 117,000 platelets/cu.mm. and 6,600 white blood cells/cu.mm., with a differential count of 83% segmented cells, 5% eosinophils, 1% basophils, 9% lymphocytes and 2% monocytes. The bone marrow from the posterior superior iliac crest showed infiltration with Hodgkin's disease. The Coombs test was negative, his blood urea was 77 mg./100 ml., serum uric acid 4·1 mg./100 ml. and creatinine 1·6 mg./100 ml. Serum bilirubin was negative; alkaline phosphatase 17·5 King-Armstrong units; serum transaminases were SGOT 15 units and SGPT 20 units; and serum calcium 10·6 mg./100 ml. The total protein was 6·6 G/100 ml. with albumin 3·6 G/100 ml. and globulin 3·0 G/100 ml. Gammaglobulin was 0·2 G/100 ml.; no abnormal protein was detected on electrophoresis, and urinalysis was normal.

COMMENTS

Newall[14] has noted that in many instances pain precedes radiologically demonstrable Hodgkin's disease of bone. He observed that the radiological appearance is either purely osteosclerotic or shows a combination of osteosclerotic and osteolytic changes. Purely destructive lesions may also be seen; these have a very poor prognosis. Pain may be relieved by local radiotherapy, but bone involvement is regarded as an indication of incurable disease, and conventional chemotherapy does not really affect osseous lesions.

The case presented here is associated with chronicity. Symptoms of bone involvement occurred 9 years after onset of the disease. It presents an uncommon picture, as osteolytic lesions of the distal extremities due to Hodgkin's disease are seldom seen and pathological fractures are very rare. Lastly, it stresses the problem of management of osseous involvement in Hodgkin's disease.

SUMMARY

Although bone involvement is frequent in Hodgkin's disease, gross lesions are not often apparent during life. Lesions mostly occur in the spinal column and pelvis, and serious involvement of the distal extremities is uncommon. A case is presented where the major obstacle in management is extensive osteolytic lesions of all four extremities, with spontaneous fractures of the fibula and both ulnae.

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