OSTEOSCLEROSIS IN MYELOMA

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In multiple myeloma the typical bone lesions are usually purely osteolytic and the presence of any osteosclerosis suggests that the diagnosis should be reconsidered. There have now been reports of forty-nine patients with myeloma with osteosclerotic deposits in whom radiotherapy could not be implicated as a cause (Kré, Wiedermann, Vykydal and Soyka 1967; Evison and Evans 1967; Osuntokun, Akinkugbe and McFarlane 1969; Mopkar and Patel 1970; Talerman and Bateson 1970). We describe a further patient with osteosclerotic myeloma whose case is very unusual in that a large part of the skeleton was affected.

A woman of sixty-five came with minor respiratory symptoms. A radiograph showed clear lung fields but striking sclerosis of the ribs and thoracic spine (Fig. 1). Soon afterwards she developed a constant severe pain in one hip and difficulty in walking. Examination showed only bone tenderness over the lumbar spine and over the right hip. The breasts were normal. There was no clinical evidence of neuropathy.

The results of investigation were as follows: haemoglobin 8.6 grammes/100 millilitres; erythrocyte sedimentation rate 145 millimetres in the first hour; serum calcium 11.5 milligrams/100 millilitres (normal 8.6-10.3 milligrams/100 millilitres); serum phosphorus 3.9 milligrams/100 millilitres; serum alkaline phosphatase 8 K.A. units/100 millilitres; plasma urea 35 milligrams/100 millilitres; serum total protein 9.8 grammes/100 millilitres; serum albumin 2.0 grammes/100 millilitres. Electrophoresis of proteins on cellulose acetate showed a dense band in the fast γ region. Immunoelectrophoresis showed an abnormal IgA arc. Radial immunodiffusion (Mancini, Carbonara and Heremans 1965) gave the following results:

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Pelvis and upper femora with widespread sclerosis. There are also lytic areas in the upper part of the left femur and in the ilia.

Attempted aspiration of sternal marrow failed and trephine biopsy from the iliac crest was difficult because the bone was extremely hard. The biopsy specimen after decalcification showed extensive formation of new bone in relation to pockets of cells morphologically resembling plasma cells. There was no evidence of Paget's disease of bone.

The patient was treated with cyclophosphamide and prednisolone. Her bone pains improved and two months after starting treatment the haemoglobin was 13.2 grammes/100 millilitres, the sedimentation rate was 37 millimetres in one hour and the IgA antigenic activity had fallen to 1,540 milligrams/100 millilitres. Four months later she was still free from symptoms.

**COMMENT**

The diagnosis of myeloma seems established. The patient had large amounts of abnormal immunoglobulin in the blood and she had excess plasma cells in the bone marrow. She undoubtedly had a disorder producing very widespread osteosclerosis. She did not have osteopetrosis: a chest radiograph five years earlier showed no evidence of bone disease. There was no evidence of renal failure or fluorosis. About 4 per cent of women of her age have Paget's disease of bone (Collins 1966), but the serum alkaline phosphatase was normal and there was no histological evidence of this. She could have had secondary carcinoma but there was no evidence of any primary lesion and no neoplastic cells except plasma cells were seen in the
histological sample. We had positive evidence that at least one osteosclerotic lesion contained plasma cells. It seems likely therefore that our patient had true osteosclerotic myeloma.

Osteosclerotic myeloma has been described in forty-nine cases. Some patients had osteolytic lesions with sclerotic margins, some had areas of periosteal new bone formation (a particularly striking example was reported by Krainin, D'Angio and Smelin (1949)), and others had dense sclerosis of one or more bones. Our patient is most unusual in that the sclerosis appeared to affect every bone studied. The only reported cases with sclerosis of comparable extent are those of Wiedermann, Krč, Soyka and Vykydal (1966). Extensive sclerosis was also noted in Case 2 of Engels, Smith and Krantz (1960) and the cases of Lessen and Gellisen (1961) and of Vandendorp, Du Bois and Margerin (1962).

Our patient had no evidence of peripheral neuropathy, a feature whose association with osteosclerotic myeloma was first noted by Morley and Schweiger (1967) and which was present in seventeen of the forty-nine reported cases of osteosclerotic myeloma.

In the differential diagnosis of osteosclerotic lesions, bone histology may be of great value, as in this case, and the finding of a normal serum alkaline phosphatase (as in fifteen out of seventeen reported cases) should also support the diagnosis of myeloma. Myelomatosis must be a very uncommon cause of osteosclerotic lesions but it is one which needs to be considered because the patient’s symptoms usually respond well to appropriate treatment.

SUMMARY

1. The case is reported of a woman aged sixty-five with widespread osteosclerosis as a feature of IgA myelomatosis.
2. Improvement was noted after treatment by cyclophosphamide and prednisolone.
3. Only two previously reported cases of myeloma with osteosclerosis of comparable extent have been found, but in forty-seven other cases in the literature some sclerosis has been noted.
4. The finding of sclerotic lesions should not rule out multiple myeloma.

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REFERENCES


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