Breast lumps and lymphoma

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Summary: We report two cases of young women in whom a breast lump was the first symptom of disseminated lymphoma. They were managed by wide excision of the affected segments of breast. Histological diagnosis was aided by immunoperoxidase stains for immunoglobulin chains. Further investigations demonstrated the wide spread nature of the disease, with involvement of bone marrow, bone cortex, lymph nodes and lung. Both patients received systemic chemotherapy, which achieved complete remission in one.

Introduction

The breast is one of the rarest sites for extra-nodal lymphoma. Mambo *et al.* (1977) reported the incidence of lymphomatous breast lumps as 0.12% of all malignant breast tumours. Despite its rarity, accurate diagnosis is important as lymphoma, unlike carcinoma, is potentially curable, even if extramammary disease is present.

Case reports

Case 1

A 23 year old woman presented with a 6 d history of an enlarging tender mass in her right breast. During the previous month she had lost 14 kg in weight and was troubled by persistent lumbar back pain and numbness over the right upper thigh and vulva. Four weeks before presentation she had experienced an episode of severe left upper quadrant pain and routine breast examination at that time revealed no abnormality. At presentation a 10 cm diameter tender mass was present in the upper half of the right breast with no lymphadenopathy. The abdomen was tender in the right upper quadrant but neither liver nor spleen were palpable. There was subjective loss of pin prick sensation in the right S2 and S3 dermatomes with no other neurological abnormality.

An excision biopsy removed a large tumour from the posterior part of the breast, histological examination of which showed breast tissue densely infiltrated by large anaplastic cells with the features of immunoblasts. Subsequent immunoperoxidase studies re-

vealed that the majority of the cells possessed cytoplasmic gamma heavy chain and lambda light chain immunoglobulin (Bullock & Petrusz, 1982) (Figure 1).

Laboratory findings included a haemoglobin concentration of 8.2 g/dl with a leucoerythroblastic picture of reticulocytes 4.5% and metocytes 4%. Liver function tests were normal except for a low serum albumin concentration 29 g/l. Serum protein electrophoresis showed an acute phase reaction and immunoglobulin analysis was indicative only of mild immunosuppression, no paraprotein being detected. Abdominal computed tomographic scan (CT) demonstrated para-spinal and para-aortic masses with destruction of the vertebral body of L2 and both iliac wings. A bone scintigram confirmed focal abnor-

Figure 1 Case 1: immunoblastic lymphoma. Every cell is positive stained by the immunoperoxidase method for gamma heavy chains. Magnification $\times 800$.

malities in both iliac crests and trephine iliac crest bone marrow showed dense infiltration with lymphoma, cytologically similar to that in the breast.

Treatment was with vincristine, cyclophosphamide, adriamycin and prednisolone, two cycles, 3 weeks apart, but after 6 weeks of chemotherapy, profound thrombocytopenia ensued and lymphoma cells appeared in increasing numbers in her peripheral blood. She died 45 d after presentation, from an intracerebral haemorrhage.

Case 2

A 25 year old woman presented with a 4 cm mass in the left breast which had been present for 2 months. She felt well and examination revealed no other abnormal physical signs. An excision biopsy showed variable involvement of breast lobules by an infiltrate of small lymphoid cells with the appearance of follicular centrocytes. These infiltrated the duct epithelium with destruction of the ducts. Other cells showed plasma cell differentiation often forming confluent sheets. Immunostaining (Figure 2) revealed that the plasmacytoid population was monotypic, being positive for lambda light chains and gamma heavy chains.

Laboratory findings included a normal blood count, liver function tests and plasma proteins. Paraprotein was not identified. A chest X-ray was normal but a CT scan showed a number of opacities within the lung parenchyma. CT of the abdomen was normal. Bone marrow biopsy was normal and skeletal survey did not demonstrate any deposits.

She was treated with intermittent chlorambucil alone for 6 months and the lung lesions regressed. A recent CT showed no evidence of lung recurrence and she is well 2 y after diagnosis.

Discussion

Both these women presented with breast lumps and each proved to be lymphoma rather than the anticipated carcinoma. The first case had widespread disease and the breast mass probably represented secondary involvement. Her response to therapy was poor, which accords with the unfavourable prognosis of widespread immunoblastic lymphoma (Meusers

Figure 2 Case 2: plasmacytoid cells stained with immunoperoxidase for gamma heavy chain. Small cells with irregular nuclei (centrocytes) negative. Magnification $\times 800$.

et al., 1980). The second case was a lymphoma of follicular centre cell origin and both its histological appearance and clinical manifestation suggest that it may have originated in the breast. Lennert (1981) reported that follicular lymphoma was the most frequent type encountered amongst extranodal lymphomas occurring in the breast.

Histological comparison between reported cases is hindered by the use of outdated histological classifications without the benefit of immunostaining. If at the time of initial surgery lymphoma is suspected, fresh tissue for frozen section examination should be obtained. This allows Giemsa and immuno-staining to be carried out.

Where there is difficulty of differentiating between a large cell lymphoma and an anaplastic carcinoma the demonstration of cytoplasmic immunoglobulin positively identifies B cell lymphomas. Other cases may be distinguished by immunoperoxidase staining using leucocyte common and keratin antibodies as reported by Lauder *et al.* (1984). No guide lines for management have been established and therapy has ranged from biopsy to radical mastectomy and/or radiotherapy with or without chemotherapy.

Our two cases lend support to a policy of conservative surgery in suspected cases followed by accurate histological assessment and staging. Extramammary disease is an indication for systemic chemotherapy.

References

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