Progressive multifocal leukoencephalopathy, myelodysplastic syndrome type II and prostatic carcinoma

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Summary

A case is described of progressive multifocal leukoencephalopathy (PML) occurring in a man with myelodysplastic syndrome type II (MDS II) and prostatic carcinoma. This is the first case, to our knowledge, of the association of PML with MDS II.

KEY WORDS: hemiplegia, phenylbutazone, myelodysplasia, multifocal leukoencephalopathy, prostatic carcinoma.

Introduction

Progressive multifocal leukoencephalopathy (PML) is a rare progressive demyelinating disease which is difficult to diagnose in life without a high index of suspicion. Thus it is important to delineate the conditions with which it is associated. There are reports of its association with widespread carcinoma-tosis but not of its association with myelodysplastic syndrome II (MDS II).

Case report

An 82-year-old retired fishmonger was referred with a 2-week history of gradual onset of left-sided weakness. He had become incontinent of urine and forgetful. His past medical history was unremarkable apart from pain from a right osteo-arthritic hip for which he took phenylbutazone. General examination showed fast atrial fibrillation (110 per min) and blood pressure 150/90 mmHg. He was not in heart failure. Rectal examination revealed a firm, enlarged prostate gland. He had a left hemiparesis with weakness more marked in the leg than the arm. Mental testing revealed him to be fully orientated and to have a good recent memory. He was mildly anaemic (haemoglobin 9.6 g/dl) with normal red cell indices, the erythrocyte sedimentation rate was 46 mm. The serum acid phosphatase was high at 31.0 u/litre and he was folate deficient with serum levels on two

occasions of 0.2 and 1.0 $\mu\text{g/litre}$ (ng/ml). Serum ferritin was in the normal range at 293 $\mu\text{g/litre}$. A marrow aspirate from the iliac spine showed a hypercellular marrow with marked dyserythropoiesis, increased reticuloendothelial iron and numerous tight ringed sideroblasts. Following admission, his hemiparesis worsened and he developed marked anosognosia, a left apraxia and frontal signs including a loss of inhibition. There was no papilloedema. His electroencephalogram was abnormal showing asymmetry between the two hemispheres with slow frequencies and focal delta activity in the right anterior region. There was no response to dexamethasone. He died 2 months after admission. Post-mortem examination revealed multiple large areas of demyelination of the white matter of both cerebral hemispheres. Histologically these showed the classical features of PML, with extensive demyelination, degeneration of oligodendrocytes and enlargement and bizarre transformation of astrocyte nuclei (Fig. 1). In addition, there was a moderately differentiated adenocarcinoma of the prostate which had invaded lymph nodes within the pelvis but had not extended beyond the pelvis.

Discussion

PML is a rare, progressive disease of the central nervous system (CNS) thought to be induced by papova viruses and occurring predominantly in immunocompromised patients. It has been reported in patients with lymphoproliferative and myeloproliferative neoplasms, carcinomatosis, chronic granulomatous disease but only occasionally in patients with no proven chronic disorder (Richardson, 1974). Papova viruses have been identified in the CNS lesions by electron microscopy and fluorescent antibody techniques and isolated from the lesions in tissue culture. (Editorial, 1972; Narayan *et al.*, 1973).

FIG. 1. PML: Neuroglial cell with a grossly enlarged nucleus surrounded by cells of normal size, H.E., $\times 512$.

MDS II gives a chronic refractory anaemia with dyserythropoiesis and pathological sideroblastic change in the marrow. Growing interest in the syndromes of marrow dysplasia and pre-leukaemia has led to a recent classification by the French/American/British Group (Bennett *et al.*, 1982). This form of acquired sideroblastic anaemia has been described in association with malignancy without the bone marrow but is most often a primary disorder which may be pre-leukaemic. The one published case (Allergranza *et al.*, 1981) of PML in pre-leukaemia

does not give sufficient haematological detail to decide exactly the nature of marrow dysplasia. There was very rapid evolution to a florid leukaemic state which is more suggestive of a smouldering leukaemia than myelodysplasia.

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