aldosterone is ineffective in this context (Ross, 1963). The need for high dosage is illustrated in this case during the patient's terminal illness, when 0.4 mg daily proved inadequate in preventing continued hyponatraemia.

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Non-African Burkitt lymphoma presenting as dysphagia

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Summary

Cases of non-African Burkitt lymphoma are rare, but the clinical manifestations of this and the African type are similar. The authors believe that this patient is the first described presenting with dysphagia without intrinsic gastrointestinal disease.

Case report

A 38-year-old Caucasian male was referred to the Department of Medical Oncology, Hackney Hospital, London, with a large retroperitoneal mass. He

presented with a 1-month history of progressive dysphagia and vomiting, associated with weight-loss of 5 kg. A barium meal showed hold-up at the cardia of the stomach. Oesophagoscopy showed dilatation with debris within; no evidence of malignant disease was seen. At laparotomy, a large lobulated retroperitoneal mass was found, displacing the stomach anteriorly and laterally and compressing the cardia. A biopsy and a gastrostomy were performed and the patient transferred to the authors' unit.

On examination he was thin, not clinically anaemic and there was no lymphadenopathy. There was mild bilateral ankle oedema. Examination of the

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cardiovascular and respiratory systems was normal. The abdomen was soft with a gastrostomy tube in place. There was an impression of a large non-tender epigastric mass, and the liver and spleen were not palpable. The central and peripheral nervous systems were normal.

The following investigations were performed: haemoglobin 11.1 g/dl; WBC $7.6 \times 10^9/l$, with normal film and differential; platelets $394 \times 10^9/l$. Urea and electrolytes normal; ESR 58 mm/hr; uric acid 0.3 mmol/l; serum bilirubin 10 $\mu\text{mol/l}$; total protein 65 g/l; albumin 40 g/l; globulin 25 g/l; aspartate transaminase 48 i.u./l; alkaline phosphatase 108 i.u./l; IgG 22 g/l; IgA 2.4 g/l; IgM 2.4 g/l; electrophoretic strip normal. Bone marrow aspirate and trephine were normal and the cerebrospinal fluid contained no abnormal cells. A gastrograffin study confirmed that there was no intrinsic gastrointestinal disease.

Review of the original biopsy and a liver biopsy showed the histological and histochemical features of a Burkitt lymphoma (Berard *et al.*, 1969). The Epstein-Barr virus antibody titre was not raised.

The patient was commenced on remission induction chemotherapy with doxorubicin, vincristine, asparaginase and prednisolone. The dysphagia was gradually relieved and within 8 days the patient was swallowing normally. A repeat barium study showed no obstruction to flow, with significant reduction in the extent of gastric displacement. The gastrostomy tube was removed a few days later and the patient remains able to swallow normally with no palpable evidence of disease. On achievement of complete remission, the patient continues on maintenance therapy of mercaptopurine, cyclophosphamide and methotrexate. Intrathecal methotrexate, followed by cranial irradiation, is given in an attempt to prevent central nervous system disease.

Discussion

Tumours of a histological type identical with that of the African Burkitt lymphoma have been described in Europe and the U.S.A. in both children and adults (Levine *et al.*, 1975). Cases presenting as leukaemia have also been described (Flandrin *et al.*, 1975). The physical pattern of disease appears

similar, with involvement of intra-abdominal structures, facial bones or the central nervous system. The disease may be staged as (1) localized involvement of the facial bones; (2) as (1) with cervical lymphadenopathy; (3) abdominal disease; (4) involvement of the central nervous system and/or bone marrow (Arsenau *et al.*, 1975). Intra-abdominal disease in the form of involvement of the stomach, intestines or ovaries appears to be relatively more common in the non-African series. Generalized peripheral lymphadenopathy is rare. Bone marrow involvement is frequently seen early on in the disease, and central nervous system disease is eventually seen in about 50% of the relapsing cases. The association with the Epstein-Barr virus, which is an important feature of the African disease, does not appear to be significant in the non-African cases (Pagano, Huang and Levine, 1973).

Dramatic responses to cyclophosphamide as single agent chemotherapy have been recorded in both disease types; the more advanced stage seen at presentation in the non-African patients is in accordance with the worse prognosis, hence the justification for more aggressive chemotherapy.

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