

Pathology in Focus

Hodgkin's lymphoma of the nasopharynx

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Abstract

The lymphoid tissues of Waldeyer's ring, including the nasopharynx, are very rare sites for Hodgkin's disease and are considered to be relatively resistant to it. This report of a case of Hodgkin's disease of the post-nasal space demonstrates the difficulty of making the diagnosis histologically and the characteristic immuno-histochemical features of this disease.

Before immunohistochemistry became so widely available, some authors speculated it might be underdiagnosed (Eavey and Goodman, 1982; O'Reilly and Kershaw, 1987). Judging by its continued rarity, this appears not to be the case.

Key words: Hodgkin's disease; Nasopharyngeal neoplasms

Introduction

The majority of lymphomas of the head and neck, whether at nodal or extra-nodal sites, are non-Hodgkin's lymphomas. The lymphoid tissues of Waldeyer's ring, including the nasopharynx, are considered to be relatively resistant to Hodgkin's disease. There are a number of reports of this disease in the literature (Baden *et al.*, 1987; Menarguez *et al.*, 1994; Chang *et al.*, 1995; Kapardia *et al.*, 1995) although only one, so far as we are aware, in British journals (O'Reilly and Kershaw, 1987). In theory, Hodgkin's disease of the nasopharynx could represent either the primary site or spread from a distant primary.

Previous reports are all of the nasopharynx being the primary site, sometimes with associated cervical lymphadenopathy. Interestingly, Biorklund *et al.* (1976) took random nasopharyngeal biopsies as part of the staging procedure and found microscopic abnormalities consistent with Hodgkin's in seven of 45 patients. This report dates from before immuno-histochemistry became as advanced as it is now; reports of nasopharyngeal Hodgkin's have nonetheless remained very infrequent. The epithelium of the nasopharynx often harbours Epstein-Barr virus (EBV) and tumours at this site, including some previously reported cases of Hodgkin's (Chang *et al.*, 1995; Kapardia *et al.*, 1995), are often EBV-positive. Takimoto *et al.* (1988) reported a nasopharyngeal mass in a child which was suspicious of lymphoma but eventually proved to be merely due to EBV infection. EBV has been implicated as a causative factor in both carcinoma and non-Hodgkin's lymphoma of the post-nasal space (Weiss *et al.*, 1992) although not apparently in Hodgkin's disease at this site. The diagnosis is histological rather than clinical in that differing neoplasia in the nasopharynx tend to give rise to similar symptoms and clinical signs.

Case history

A 46-year-old man gave a several-month history of a feeling of fullness in his right ear and of difficulty breathing through his nose at night. Clinical examination revealed a large smooth mass largely filling the right side of the post-nasal space. He was a smoker but had no other history of exposure to known carcinogens. There was no history of fever, sweats, pruritis or alcohol-induced pain. Full blood count and biochemical tests were normal, erythrocyte sedimentation rate 5 mm in the first hour. Serological testing revealed evidence of past, but not recent Epstein-Barr infection (specific (IgG present, IgM absent) and an enzyme immunoassay for antibodies to human immunodeficiency virus (HIV) types 1 and 2 was negative.

Biopsy of the mass (Figure 1) showed a background of uniform small lymphocytes with scattered large atypical

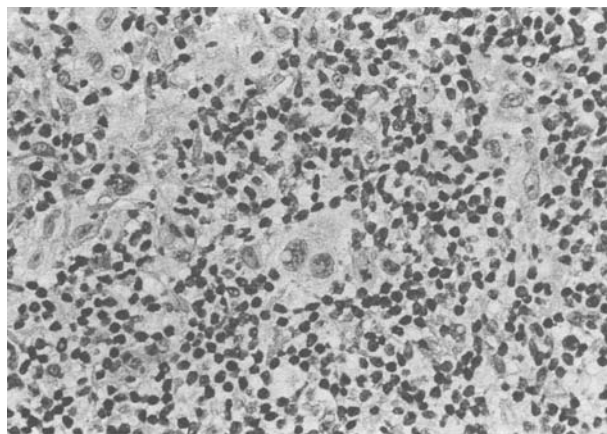


FIG. 1
Reed Sternberg cells. (H & E; $\times 10$).

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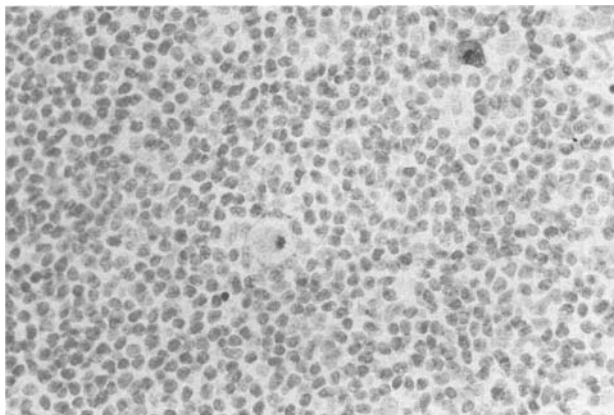


FIG. 2a

A cell showing paranuclear and membrane expression of CD15. (Background staining with haematoxylin $\times 10$).

mononuclear cells, some with a lacunar appearance. Occasional cells were bi-nucleate, i.e., of the classic Reed-Sternberg type. Immunohistochemistry revealed paranuclear and membrane expression of CD15 and CD30 (Figures 2a and 2b), with occasional cells expressing cytoplasmic EMA (epithelial membrane antigen). There were scattered mummified cells. These features were all suggestive of 'classic' Hodgkin's disease. At this extranodal site it was not possible to classify the disease further on the basis of histological architecture.

While this first biopsy suggested Hodgkin's, the rarity of this disease at this site required consideration of infectious mononucleosis mimicking these appearances. A computed tomography (CT) scan showed asymmetrical enlargement of the right side of the nasopharynx by a mass extending anteriorly to the posterior choana with effacement of the right parapharyngeal space, and abutting the skull base without evidence of bony destruction. A 1 cm node was detected posterior to the angle of the mandible on the right with multiple smaller nodes present in the deep chains bilaterally. These features suggested the mass to be truly neoplastic. Repeat biopsy of the nasopharyngeal mass confirmed the diagnosis, giving the same histological and immunochemical findings.

Staging CT scans of chest and abdomen were normal. With the nodes found on the scan of head and neck, it was felt that the disease was not sufficiently localized to be managed with radiotherapy alone and treatment was commenced with a combination of chlorambucil, vinblastine, procarbazine and prednisolone. The patient has now

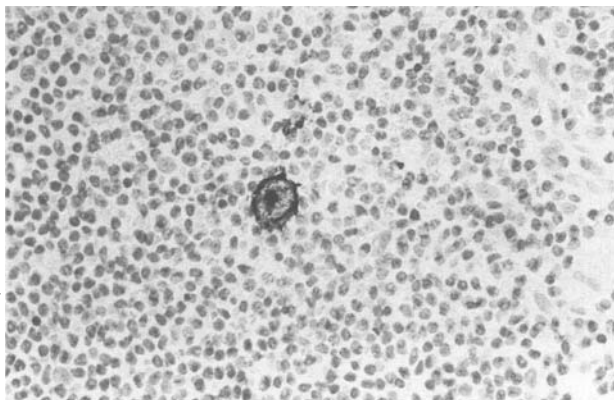


FIG. 2b

A cell showing paranuclear and cytoplasmic expression of CD30. (Background staining with haematoxylin $\times 10$).

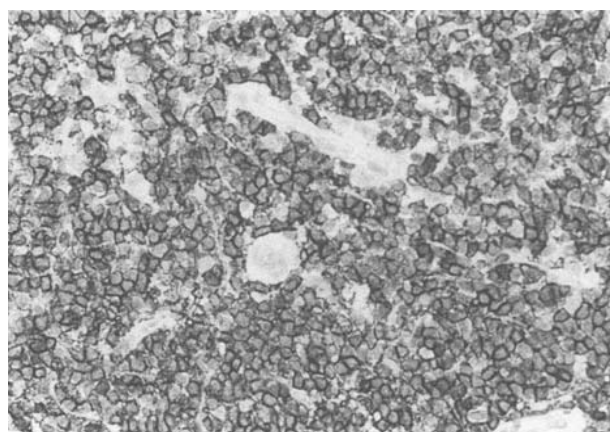


FIG. 3

CD45 stain: the large cell is CD45-. (Background staining haematoxylin $\times 10$).

completed three courses of chemotherapy, with resolution of all his symptoms. A repeat CT scan has shown resolution of the tumour.

Discussion

Lymphoma is always high on the differential diagnosis of masses in the nasopharynx. There are characteristic immunophenotypes for classic Hodgkin's (CD45-, CD20- and/or CD3-, CD15+ and/or CD30+). Both our biopsy samples showed this typical morphology and immunophenotype (CD45-, CD20-, CD15+, CD30+) which clearly distinguishes it from non-Hodgkin's lymphoma (Figure 3). Lymphocyte-predominant Hodgkin's disease, now considered a different entity from 'classic' Hodgkin's (i.e. nodular sclerosing, mixed cellularity and lymphocyte depleted), has a different immunophenotype; its 'button' cells are usually (90 per cent) CD20+, and often (50 per cent) CD45+ and EMA+, with CD15-, CD30-. The presence of antibodies to Epstein-Barr virus presumably reflects the fact that Waldeyer's ring is a reservoir of this virus in many individuals. It is often found in mixed cellularity Hodgkin's, although rarely in lymphocyte-predominant lymphoma. Histological architecture, treatment and outcome appear to be similar to comparable Hodgkin's disease at other sites (Kapardia *et al.*, 1995). With the increased use of immuno-histochemistry, there has not been a commensurate increase in reports of Hodgkins in the nasopharynx and it evidently remains a rare entity.

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