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Small lymphocytic lymphoma presenting with simultaneous involvement of parotid and submandibular glands bilaterally, maxillary sinus, hard palate and optic nerve

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Extranodal lymphomas are localized more often in the head and neck than in any other sites of the body. Involvement of the nose and paranasal sinuses is the most frequent localization (Sawyor *et al.*, 1987). Involvement of salivary glands is rare, only five per cent of all extranodal lymphomas (Freeman *et al.*, 1972; Gleeson *et al.*, 1986; Shikhani *et al.*, 1987).

We report a 49-year-old male with small lymphocytic lymphoma presenting with simultaneous involvement of the parotid and submandibular glands bilaterally, and of the maxillary sinus, hard palate and optic nerve. Such an occurrence, to our knowledge, has not so far been described.

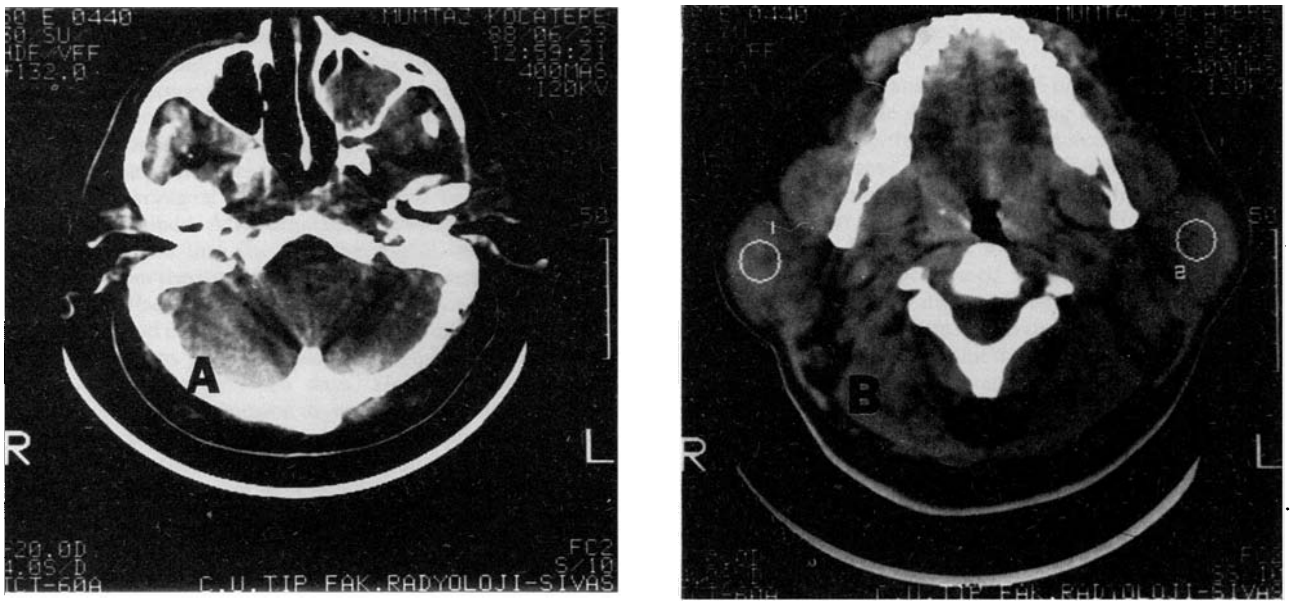
Case report

A 49-year-old man was admitted to the Department of Otorhinolaryngology in June, 1988 complaining of swelling of his face, submandibular areas and palate. He also complained of dryness of the mouth, nasal obstruction, tinnitus, and hearing loss on the left side for the past three months. He had a three month history of painless swellings first of the right cheek and then of the left, submandibular area and palate. His past medical history was unremarkable.

Examination of the head and neck showed that both cheeks were diffusely swollen; on palpation a firm, non-tender, diffuse swelling of the parotid and submandibular glands was present on both sides. Two submandibular lymph nodes were palpable, 2 × 2 cm on the right and 1 × 1 cm on the left side. Examination of the oral cavity showed a firm submucosal mass involving the left side of the hard palate with a 3 × 3 mm area of ulceration with smooth margins. There was no salivary flow from the orifices of both Stensen's and Wharton's ducts. Anterior rhinoscopy and indirect nasopharyngoscopy showed mucosal congestion. The left maxillary antrum was obliterated by a soft tissue mass. The middle ears were atelectatic on both sides; bilateral type-C traces were obtained on tympanometry. A pure tone audiogram showed a mild (mean 30 dB) sensorineural hearing loss on the left side and a moderate (mean 52 dB) mixed loss on the right.

Plain X-ray films and a CT scan of the head and neck demonstrated a soft tissue mass completely obliterating the left maxillary sinus and diffuse enlargement of both parotid and submandibular salivary glands; no bone destruction was identified (Fig. 1).

Biopsies were obtained from the tail of the left parotid, left submandibular gland, hard palate, left maxillary sinus, and cervical lymph nodes for diagnostic purposes. All showed the characteristic pathological features of a non-Hodgkin's low grade lymphoma, of the small lymphocytic cell type (SLL)



(A) (B)

FIG. 1

CT scan at the level of the maxillary sinuses demonstrating a soft tissue mass completely obliterating the left maxillary sinus (a) and diffuse enlargements of the parotid glands (b).

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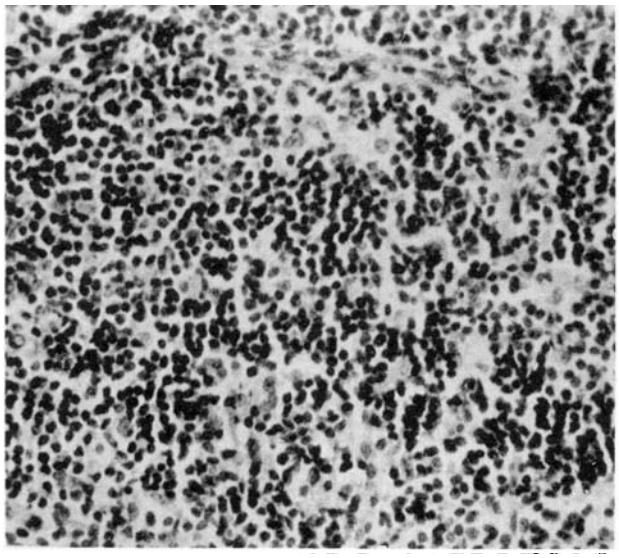
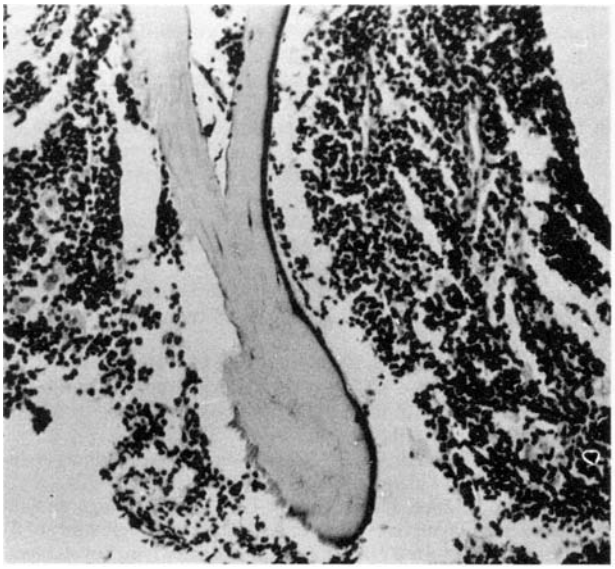


(i)

(ii)



(iii)

FIG.2

Involvement of the submandibular gland, maxillar sinus, lymph node (i), hard palate (ii), and bone marrow (iii) with SLL.

(Working Formulation of non-Hodgkin's Lymphomas for Clinical Usage) (Fig. 2).

On general physical examination, there was no evidence of axillary and/or inguinal lymphadenopathy or hepatosplenomegaly. On ophthalmological examination, there was severe papilloedema with the presence of induced venous pulsation on the left side, but no sign of keratoconjunctivitis sicca.

Pretreatment clinicopathological work-up included a full blood count, bone marrow biopsy and thoracic and abdominal CT examination.

WBC was 4.8×10^9/l with a normal differential. Haemoglobin was 10 gm/dl and ESR was 56 mm/h. Clotting tests and a platelet count were within normal limits, as were liver function tests and serum immunoglobulin levels. Bone marrow biopsy demonstrated extensive infiltration with mature-appearing lymphocytes, consistent with the bone marrow involvement by SLL (Fig. 2).

CT demonstrated a number of para-aortic lymph nodes approximately 1 cm diameter, and a small right pleural effusion. A CT scan of the brain was initially interpreted as normal; however, the films of the optic nerve tract demonstrated marked thickening of left optic nerve in a non-uniform fashion, consistent with infiltrative disease (Fig. 3).

Cerebrospinal fluid examination revealed no abnormality.

The patient was deemed to have stage IV-E disease (Ann Arbor Classification) and was started on multidrug chemotherapy consisting of cyclophosphamide, vincristine and prednisone for a total of six cycles every three weeks. Generally the chemotherapy was well tolerated, but vincristine neuropathy occurred.

The patient had a good response with a near complete improvement of the facial swelling. Six months after the completion of therapy he was readmitted with a recurrent swelling of his face. He refused further assessment and therapy, and was discharged of his own will. He has been lost to follow-up.

Discussion

Non-Hodgkin's lymphomas (NHL) may involve any organ or tissue of the body (Seligman *et al.*, 1974). The head and neck is the most common area for the presentation in both nodal and extranodal forms (Rosenberg *et al.*, 1961; Nichols *et al.*, 1982; Larson *et al.*, 1984). However, even in patients with head and neck lymphoma, involvement of the salivary glands (Freeman *et al.*, 1972; Hyman and Wolff, 1976; Nichols *et al.*, 1982;

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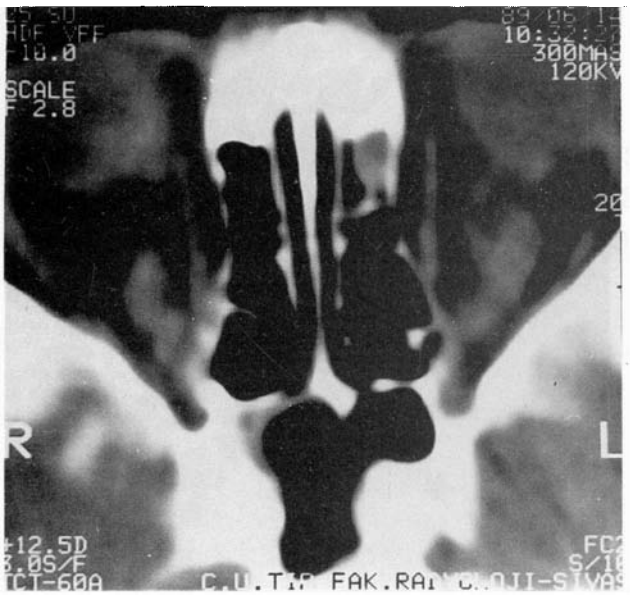

FIG. 3

CT scan of the orbits demonstrating a non-uniform thickening of left optic nerve consistent with lymphomatous involvement.

Maeda *et al.*, 1988) or paranasal sinuses is uncommon (Hamaker and Singer, 1986).

A review of all the English literature until 1987 by Shikhani *et al.* revealed a total of 324 cases reported as 'lymphomas of salivary glands', the majority in the parotid and only 38 cases in the submandibular glands. In 1988, Schusterman *et al.* reported 36 cases of lymphoma presenting as a salivary gland mass, with 75 per cent in the parotid. Of the 37 patients reported by Wang (1971) with extranodal lymphoma arising from the oral cavity and paranasal sinuses, only eight (22 per cent) had involvement of the hard palate. In a total of 468 cases with malignant tumours of the minor salivary glands in three series, the authors did not find lymphoma or did not mention it (Chaudry *et al.*, 1984; Chau and Radden, 1986; Waldron *et al.*, 1988).

SLL is a low grade NHL, characterized morphologically by a diffuse proliferation of small, mature-appearing lymphocytes (Evans *et al.*, 1978; Working Formulation for Clinical Usage, 1982). Of 36 patients with salivary gland lymphomas (Schusterman *et al.*, 1988) and of eight patients with paranasal or oral involvement by lymphoma (Wong *et al.*, 1975), none had a histopathology of SLL. In the series of Fierstein and Thawley (1978) SLL showed a predilection for the submandibular gland, namely all five cases with submandibular lymphoma had been SLL. They also noticed that there were no SLL presenting in the nose or paranasal sinuses.

No case of SLL, to the best of our knowledge, involving simultaneously the parotid and submandibular glands bilaterally, in a diffuse fashion, maxillary sinus, hard palate and optic nerve has so far been reported, although bilateral synchronous and metachronous parotid lymphoma has been reported to occur (Colby and Dorfman, 1979). Of 40 cases reported by Gleeson *et al.* (1986) with salivary gland lymphoma, only one had bilateral parotid involvement. The case reported by Bickerton and Brockbank (1988) with lymphoplasmocytic lymphoma, a sub-group of the low grade malignancy, had involvement of the larynx, soft palate and nasal cavity.

In non-Hodgkin's lymphoma, CNS involvement is well recognized (Lan *et al.* 1975; Herman *et al.*, 1979; Young *et al.*, 1979). SLL is considered indolent and rarely invades the CNS, being less than 2 per cent of reported cases (Lan *et al.* 1975; Herman *et al.*, 1979; Young *et al.*, 1979; Levitt *et al.*, 1980; Morrison *et al.*, 1989). A case of mantle zone lymphoma, a variant of lymphocytic lymphoma (Weisenburger *et al.*, 1982), with optic nerve involvement has been reported (Bedotto *et al.*, 1986). Despite the apparently extranodal presentation, our case had systemic, although clinically silent, disease. There has been bone marrow involvement by lymphoma at diagnosis in 40 to 90 per cent of cases with SLL (Rosenberg, 1975; Foucar *et al.*, 1982; Morra *et al.*, 1989). As many as 60 to 90 per cent of patients with SLL for whom staging data were available have been reported to be stage IV by virtue of a positive bone marrow biopsy specimen (Ben-Ezra *et al.*, 1989; Morrison *et al.*, 1989). The diagnosis of primary extranodal lymphoma should not be made unless complete staging is performed, including bone marrow examination. This is not merely of academic interest, but also the type of treatment (chemotherapy *vs* local radiotherapy) will depend on the results of staging. Low grade lymphomas, are however, characteristically refractory to curative therapy, with most patients experiencing repeated relapses, as in our case, and eventually death (Ben-Ezra *et al.*, 1989).

We also emphasize that lymphoma should be considered in the differential diagnosis of bilateral diffuse swelling of the parotid gland, (Nichols *et al.*, 1982), and that the central nervous system should be evaluated when lymphoma is present in the paranasal sinuses.

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