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Acute leukaemic cell infiltration of the nose

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Abstract
Leukaemic cell infiltration of the nose as a first manifestation of the disease is extremely rare. We report a case of a three-year-old child who had presented with a swelling at the root of the nose for one month and proptosis of the right eye for one week. CT scan revealed a mass infiltrating the nose and nasal cavity along with infiltration of the retro-orbital region. Biopsy showed it to be myeloid cell deposits. Patient was put on antileukaemic chemotherapy but died two months after the first appearance of the symptoms.

Introduction

Leukaemia may present in a variety of ways. Leukemic cell infiltration of the larynx (Shilling *et al.*, 1967), skin (Haubenstock *et al.*, 1987), orbit (Firkin and Moore, 1960), CNS (Bleyer, 1988), testicular and ovarian tissue (Lampkin *et al.*, 1988) is well reported. On the other hand, leukaemic cells infiltrating the nose is extremely rare. Except for one report (Brama, 1982) we have not come across any similar presentation.

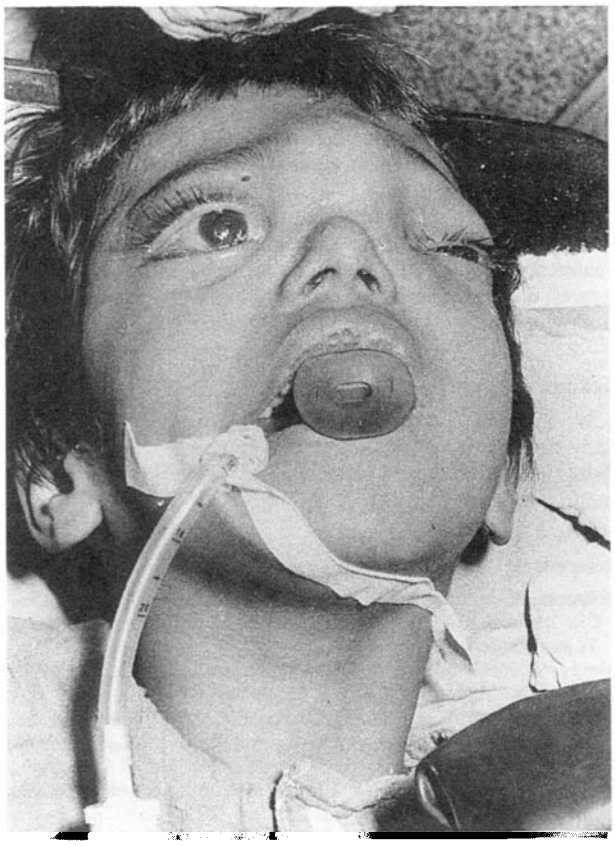

Fig. 1
Front view of the patient (intubated) with the swelling over the nose. Proptosis seen clearly.

Case report

A three-year-old male child presented at the ENT Department of Lady Hardinge Medical College and Associated SK Hospital, New Delhi, with a progressive swelling at the root of the nose for one month and proptosis of the right eye for one week (Figs. 1 & 2).

Examination revealed a well oriented child with a diffuse, firm, non-tender, freely mobile swelling of 5 × 4 cm size over the root of the nose extending to the frontal region. There was proptosis of both eyes. Apart from the swelling over the nose, and restriction of the ocular movements, ENT and eye examinations were normal. General physical, neurological and systemic examination also did not reveal any positive finding.

Investigations: Hb 11 gm/dl, total leucocyte count 11,800/dl. Peripheral blood examination showed frank picture of acute myelomonocytic leukaemia (N_{44} L_{08} M_{14} myelomonoblasts 22 per cent, promyelocytes 27 per cent, myelocytes 8 per cent, metamyelocytes 2 per cent. Two per cent of blasts showed Auer

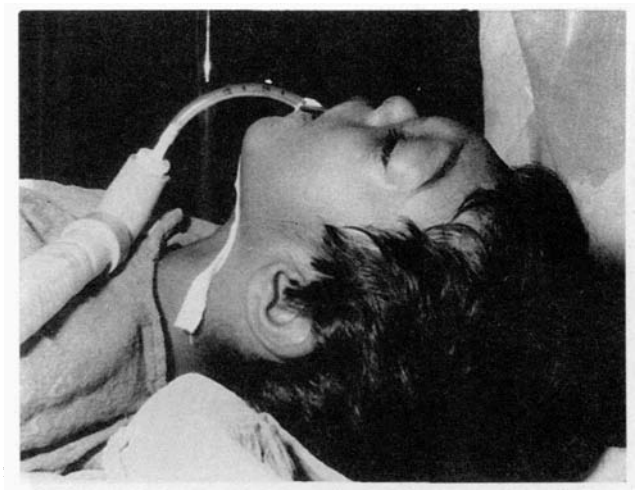

Fig. 2
Profile of the patient.

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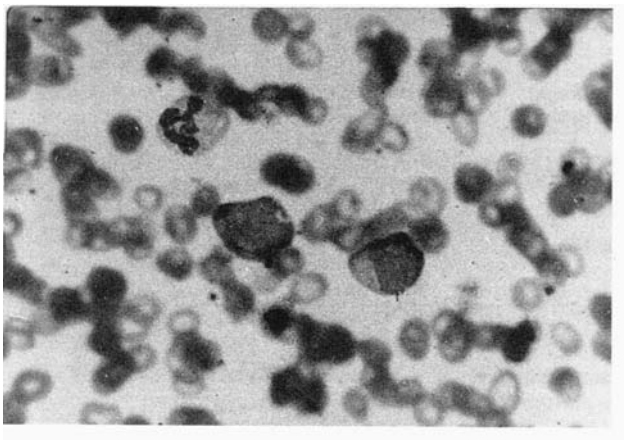

FIG. 3

Peripheral blood smear showing two myeloblasts with an Auer rod in top left (H&E stain).

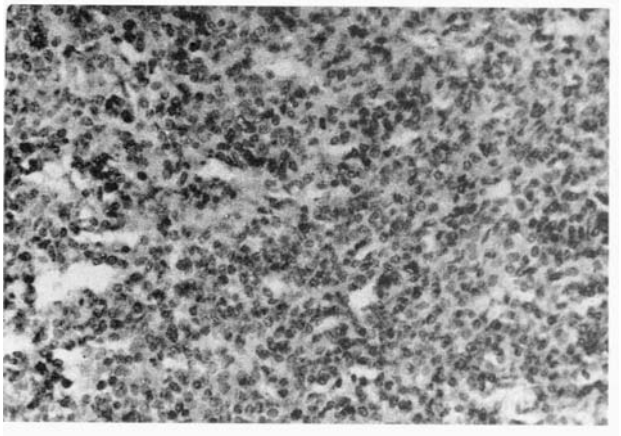

FIG. 5

Histopathological picture of the biopsy taken from the nasal mass.

rods) (Fig. 3); RBC's were normocytic, normochromic and platelets, were adequate.

A CT scan revealed a mass in the retro-orbital region with thickening of right lateral rectus and left medial rectus along with obliteration of the retro-orbital fat. The mass was seen infiltrating the nose and nasal cavity and area overlying the frontal bone (Fig. 4).

A biospy was performed from the nasal mass which revealed sheets of monomorphic cells infiltrating the surrounding fibro-fatty tissue. These cells were round, with round to oval nuclei, having a fine chromatin network and slightly prominent nucleoli. The cytoplasm was scanty to moderate, with well defined cell margins (Fig. 5). Based on the above findings, a diagnosis of granulocytic sarcoma was made.

The patient was put on antileukaemic chemotherapy but died within a week of starting treatment.

Discussion

Leukaemia is a malignancy of leucocytes, characterized by increase in immature white blood cells in the peripheral blood, accompanied by diffuse infiltration of the bone marrow, and occasionally somatic organs (Kauh, Y.C., 1987). Leukaemia may be acute or chronic. The acute-non lymphoblastic type of leukaemia (ANLL) may vary from type M_1 –M_7 (F A B classification) (Behrman and Vaughan, 1983). The patient reported by us suffered from M_4 (ANNL).

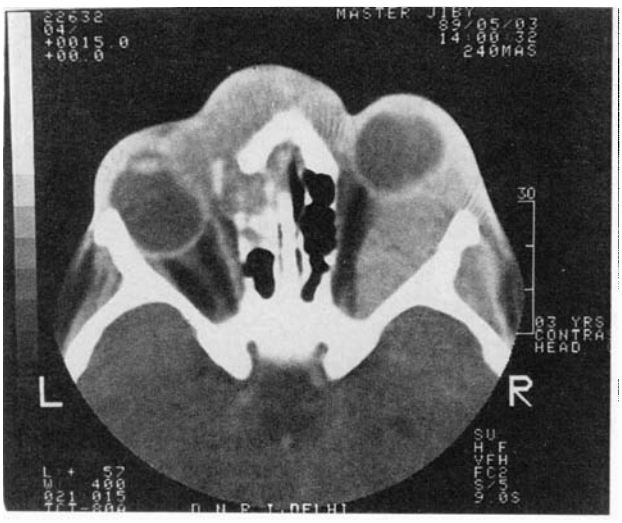

FIG. 4

CT scan showing tumourous mass infiltrating the retrobulbar region, the nose and nasal cavity.

Occasionally, the ANLL blasts form an extramedullary solid tumour collection which is known as a myeloblastoma or granulocytic sarcoma (Kauh, Y. C., 1988). Behraman and Vaughan (1983), reported short presentation period of ANLL patients (50 per cent having less than six weeks illness). This was observed by us also as our patient's symptomatology was only of one month's duration. The leukaemia deposits appeared first in the nose, without any other ENT manifestations.

Lampkin *et al.* (1988) reported that in young children (one to two years), with ANLL, there was significantly higher involvement of the liver, spleen, CNS and skin with M_4 and M_5 being the predominant FAB types. They also observed that the granulocytic sarcomas frequently involved periosteal, perineural and epidural regions and had a prediliction for the cranium and facial bones. They typically presented in children as unilateral or bilateral exophthalmos from a retrobulbar mass. In our case, retrobulbar involvement though present, was a later finding as compared to the facial swelling which appeared first.

The overall prognosis in cases of acute non-lymphoblastic type of leukaemia is poor (Kraus, 1978). In our case too, the patient died within two months of the appearance of the first symptom. However, with newer diagnostic techniques and better treatment facilities becoming available at more and more centres, it is now possible to achieve a higher remission as well as a higher salvage rate in leukaemic patients.

Acknowledgement

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