Child's Nerv Syst (1993) 9:483–484

Child's Nervous System CNS

Ectopic meningioma of the paranasal sinuses

S. Kumar [1], P.L. Dhingra [2], R. Gondal [3]

[1] Department of Neurosurgery, G.B. Pant Hospital, New Delhi-110 002, India
[2] Department of Pathology, G.B. Pant Hospital, New Delhi-110 002, India
[3] Ear Nose and Throat Department, Maulana Azad Medical College, New Delhi-110 002, India

Received: 28 February 1992

Abstract. An 11-year-old boy presented with epistaxis and proptosis. Plain X-ray revealed a bony mass in the nasal cavity. Computed tomography showed a high-density mass which at surgery turned out to be a meningioma.

Key words: Ectopic meningioma – Paranasal sinus meningioma

Introduction

Meningiomas are relatively common neoplasms of the nervous system. Primary ectopic meningiomas are rare, and the majority of them have been found in the orbit and calvarium [3, 6]. Primary meningiomas of the nasal cavity and paranasal sinuses are even rarer.

Recently we came across a case of paranasal meningioma which, because of its rarity and unusual appearance on plain X-ray, we report here.

Case report

An 11-year-old boy was brought to the emergency room with a history of epistaxis off and on for the last 3 years. A private practioner had attempted biopsy of the tissue and the patient suffered severe bleeding. After anterior nasal packing patient was transferred to the emergency service of LNJP Hospital.

Physical examination revealed active bleeding from the nose. There was fullness of the left cheek and mild proptosis. Vision was 6/6 in the right eye and 6/12 in the left eye. Perimetry showed normal values. Plain X-ray revealed a mass of bone density expanding the nasal bones and filling the nasal cavity and left ethmoidal and maxillary sinuses (Fig. 1). Computed tomography (CT) showed a high attenuating mass filling the ethmoidal and maxillary sinuses and the medial portion of the left orbit (Fig. 2).

The mass was exposed through a lateral rhinotomy incision combined with an external frontoethmoidectomy incision. A greyish-white mass was found filling the anterior ethmoidal sinus and nasal cavity and the medial portion of the left orbit. The mass was putty-like, granular and soft with a covering of calcium. It was removed totally.

Histopathological analysis of the tissue confirmed the diagnosis of meningioma. The postoperative period was uneventful and there has been no evidence of recurrence during the last 3 years of follow-up.

Discussion

Friedman et al. [2], on reviewing the literature, found fewer than 100 cases of extracranial meningiomas of the head and neck reported up to 1990. Only 31 of these involved the paranasal sinuses: 10 the ethmoidal sinus, 8 the frontal sinus, 6 the maxillary sinus, 2 the sphenoidal sinus, and 5 involved more than one sinuses. In one case tumour involved two sinuses and the adjoining portion of the orbit.

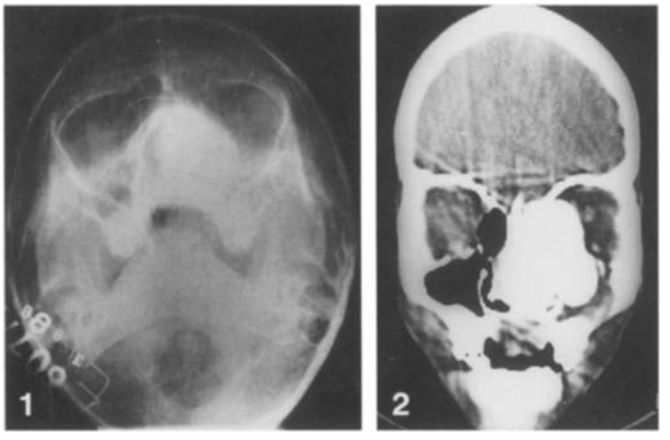

Fig. 1. Plain X-ray showing bony mass filling the nasal cavity and ethmoidal and maxillary sinuses on the left side

Fig. 2. CT showing high attenuating mass filling the nasal cavity, ethmoidal and maxillary sinuses and the medial portion of the orbit on the left side

Correspondence to: S. Kumar

Hoye et al. [5] divided ectopic meningiomas into four groups:

1. Primary intracranial tumour with direct extracranial extension

2. Tumour originating from arachnoid cell rests of cranial nerve sheaths with extracranial growth

3. Extracranial growth without any apparent connection with foramina or cranial nerves, presumably arising from embryonic rests of arachnoid cells

4. Intracranial meningioma with extracranial metastasis

The fact that our patient had epistaxis of 3 years' duration suggests that his meningioma arose primarily in the paranasal sinus. The tumour occupied the ethmoidal sinus, the maxillary sinus and the adjoining portion of the orbit.

A review of the literature reveals that meningiomas of paranasal sinuses occur in the younger age group. Nasal obstruction, proptosis and epistaxis are the most common presenting symptoms. Our observations were of this kind. Paranasal sinus meningiomas occur predominantly in males, in contrast to intracranial meningiomas [7].

X-ray of paranasal sinuses may show clouding of the sinus and/or a mass of high density. CT shows a high-density mass which may enhance on contrast administration.

Surgical resection is the treatment of choice. The prognosis for a patient with primary meningioma of the nasal cavity and paranasal sinus is good [4].

The pathogenesis of ectopic meningiomas is still not clear. According to New and Devine [8], ectopic meningiomas of the paranasal sinuses arise from embryonal cell rests which were pinched off and left behind during embryonal development. Shuangshoti and Panyathanya [9] believe it to arise from multipotential mesenchymal cells. According to Crain and Gozela [1], ectopic pacchionian bodies along the course of nerve may give rise to meningioma.

Acknowledgement. We are grateful to Dr. M. Kualilullah, Director, G. B. Pant Hospital, New Delhi, for permitting us to report this case.

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