

HAEMANGIOMA OF THE ORBITAL BONES

Report of a case

F. DAMATO

M.D., D.O., D.O.M.S., F.R.C.S.

Summary

A case of haemangioma of the orbital bones is reported and commented on.

Haemangiomas of bone are rather uncommon. They are generally solitary lesions and make up less than 1.2% of all tumours. More than twice as many females as males are affected. One third of the cases were found in the fifth decade of life. (Dahlin D.C. 1967).

Seventy per cent of solitary Haemangiomas were found in the cranium and vertebrae. Many of the latter tumours were asymptomatic and were discovered during roentgenographic examination for other reasons. Physical examination does not contribute any specific information. The lesion is usually multicentric with involvement of more than one bone. Otis and others suggest that tumours with multifocal involvement are associated with a better prognosis (Unni *et al* 1971). As regards roentgenographic features in the skull, haemangiomas produce a well circumscribed zone of rarefaction which may show a honeycombed appearance and is often associated with expansion of the bony profile. This expanded zone may show striation of bone radiating outward from the centre of the lesion. The osseous process tends to become stabilized with variable degrees of lytic and sclerotic changes. (Dahlin D.C. 1967).

Histopathologically, most haemangiomas of bone are basically cavernous in type, lined by a simple layer of flattened endothelial cells. Sometimes, a capillary component is present and may even be dominant. The vascular channels may be empty or filled with red blood cells or proteinic eosinophilic material. They are separated from one another by loose con-

nective tissue or bony trabeculae.

Whether bone Haemangiomas represent vascular tumours or malformations has been extensively discussed. (Gutierrez and Spjint 1972). The lesions are osteolytic, the cause of the osteolysis being obscure; Gorham (1955) thinks that it is due to hyperaemia. Others (Cohen and Craig 1955) believe that bone destruction takes place by gradual pressure of enlarging lymphatic channels. Probably, the combination of both factors plays an important part in bone destruction. The colour appearance of the growth is usually blue to violet. The bone is spongy and profuse bleeding is usually encountered during surgical removal. Haemangiomas usually respond well to surgical treatment.

Case report

On 19.2.73, Mrs. A.A. 38 years old, was seen in my clinic complaining of puffiness of the lids of left eye (Fig. 1). Closer

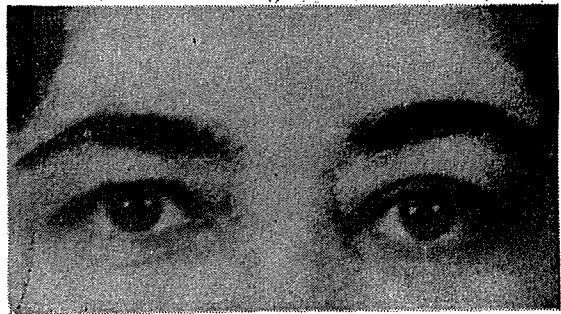


Fig. 1.

examination revealed a very small degree of proptosis of the left eye. Fundus examination did not show any abnormal changes. Vision and visual fields were normal. However, the X-ray report was as follows: (9.3.73): "There is erosion of the greater

wing of the sphenoid and part of the lesser wing of the sphenoid and of the frontal bones on the left side. Appearances are suggestive of a retro-ocular space occupying lesion." (Fig. 1, 2, 3, 4.) General examination did not show any abnormalities.

The patient was transferred to the National Hospital, Queen Square, London (25.11.73) for further investigation and treatment, under the care of Dr. K.J. Zilkha and Mr. Laurence Walsh. When examined on 25.4.73, Fundus L.E. showed disc blurring of the nasal and to a lesser extent upper margin, that is, early papilloedema. There was also an axial irreducible proptosis of several mms Left eye. There was a feeling that proptosis was increasing slowly all the time.

Here is the radiological report (Dr. G. du Boulay): "There is an area of abnormal bone extending from the left Pterion downwards and forwards into the lateral part of the greater wing of the sphenoid and the lateral wall of the orbit. The abnormality consists of a mixture of coarse trabeculations and large vascular channels, possibly with some sclerosis at the pterion itself. Surrounding these more obvious abnormalities, there is an area in which the bone is hypertranslucent. The pineal is calcified and not displaced. The sella appears normal. The bone change is probably due to a meningioma, but it is unusual because of the forward extension into the lateral wall of the orbit. It may be a very vascular tumour. Optic canals are normal.

Brain Scan: Knowing where the abnormality is, one can see that there is some increase in uptake in the region, but this is largely masked by the activity in the surrounding muscles.

Left carotid arteriogram: repeated attempts at catheterisation of the external carotid ran into so much difficulty that it seems better to do without, particularly as a common arteriogram makes the position extremely clear.

There is a good filling of the anterior middle and posterior cerebral arteries and of the ophthalmic artery from the internal carotid.

The only abnormality of the intracranial circulation is the slight upward and backward displacement of two small

anterior temporal branches of the middle cerebral, showing the position of the margin of the intracranial portion of the tumour. The middle meningeal artery is hypertrophied and supplies an enormous amount of blood to the tumour in the region described on the report of the plain X-Rays. Some of the vascular spaces in the tumour are of aneurysmal dimensions and the contrast medium pools in them for a considerable time. The middle meningeal artery appears to be the sole supply to the tumour.

Although rather bizarre in appearance, there is little doubt that this is a meningioma. Mr. L. Walsh favoured exploration because the patient had a peculiar vascular condition in the left orbit. The condition appeared progressive and there was a slight swelling of the left disc.

The operation was performed on 9.5.73. A left fronto-temporal craniotomy was carried out. A decompression was made at the base and attention was directed toward the upper part of the sphenoidal ridge in the region of the pterion where an abnormality was seen and where considerable hemorrhage was occurring.

The bone in the upper part of the sphenoid ridge in the region of the pterion was abnormal and obviously infiltrated with tumour. Abnormal bone was removed from this region and as far as the superior orbital fissure where normal bone was encountered. Abnormal bone removed also from the lesser wing of the sphenoid and as far as the superior orbital fissure. The roof of the orbit was dealt with similarly and also the bone in the floor of the middle fossa. In this way, it appeared that all abnormal bone had been removed. A small incision was made in the dura above the pterion and the subfrontal and temporal regions were inspected intradurally. No tumour was seen. A temporary tarsorrhaphy was carried out at the end of the operation. The patient's post operative progress was satisfactory. Proptosis and early papilloedema soon disappeared. Three specimens were sent for a histological report.

The portions of bone examined showed marked distension of the intertrabecular bony spaces which are filled with elongated cells like connective tissue and numerous

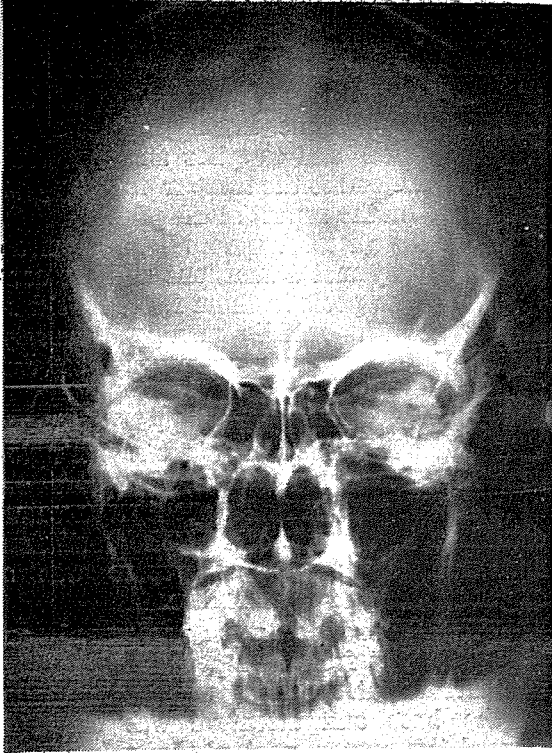


Fig. 1.

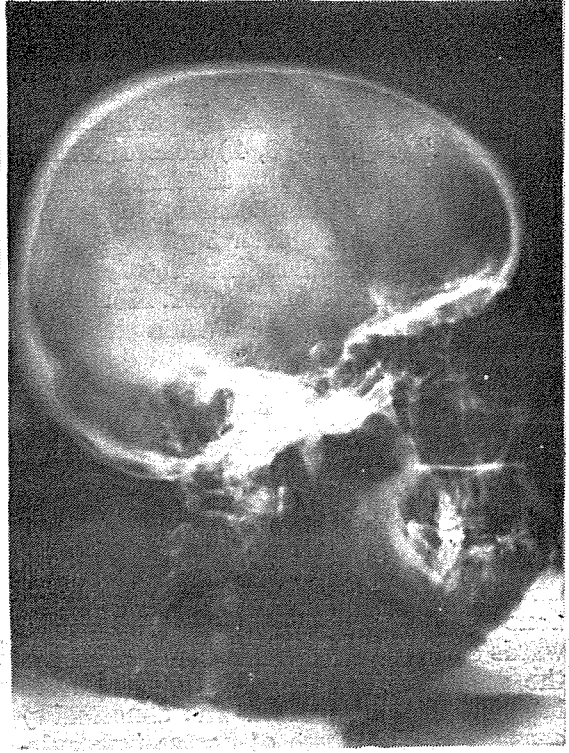


Fig. 2.

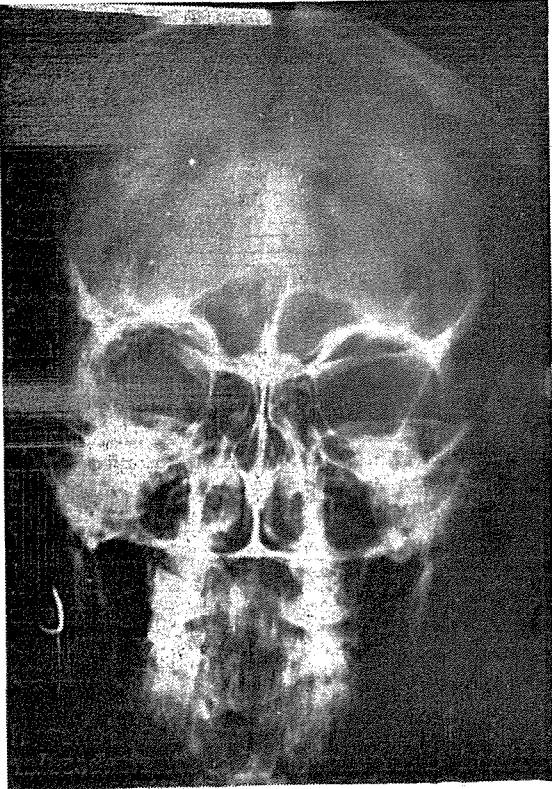


Fig. 3.

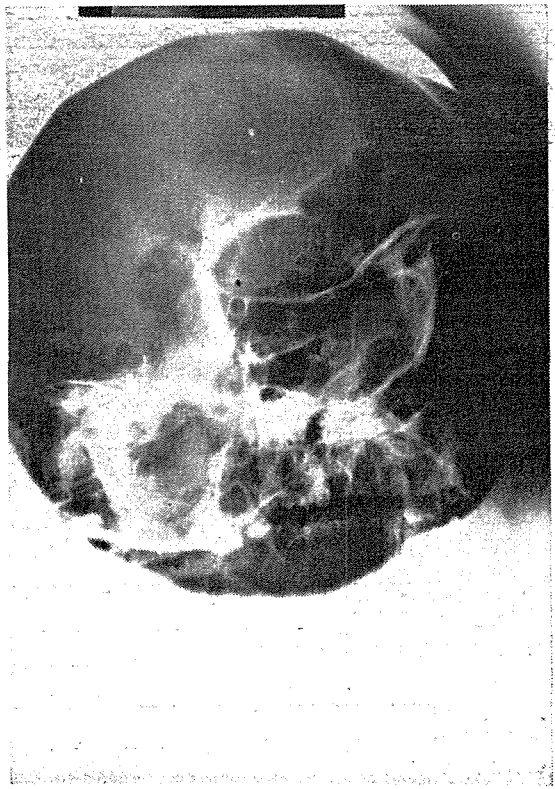


Fig. 4.

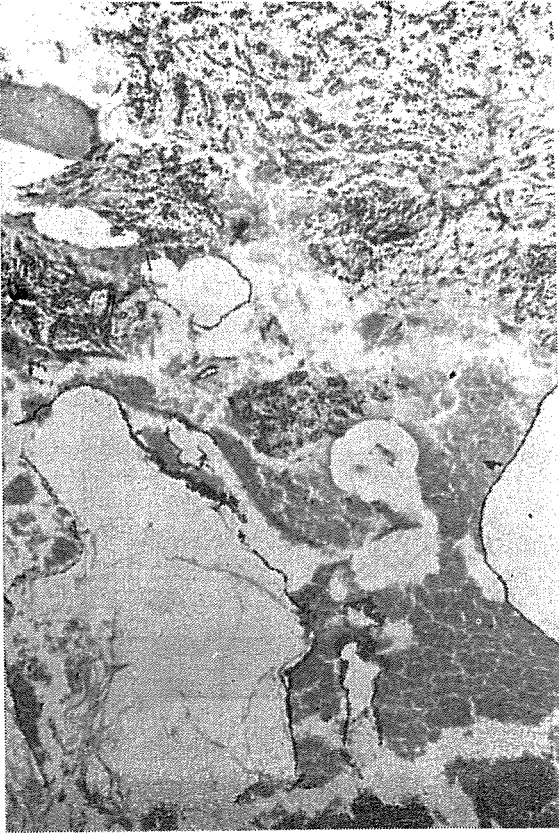


Fig. 5

blood capillaries which show hyperplasia of the endothelial cells lining them. Occasionally osteoclasts occur in the tissue. The histological appearance suggests that the bone is the seat of a haemangioma. Fig. 5.

This tissue consists of spindle shaped cells. Evidence of meningioma was not found in it. Fig. 6.

This tissue consists of vascularised connective tissue in which occur collections of round cells. No evidence of meningioma was found in it. From the histological examination, it would appear there is a haemangioma of the tissue taken from the orbital ridge (W.G.P. Mair). Fig. 7.

An examination of the section of the lesion carried out by Dr. H.A. Sissons of the Department of Morbid Anatomy of the Institute of Orthopaedics confirmed the diagnosis.

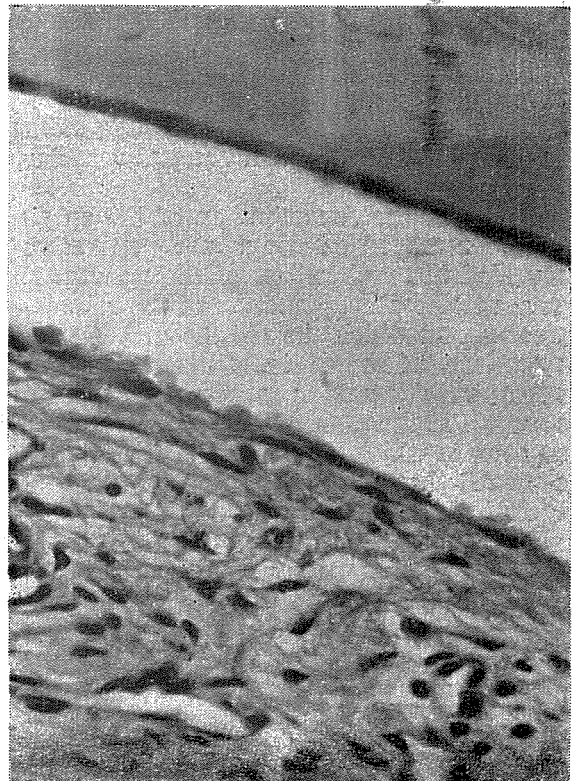
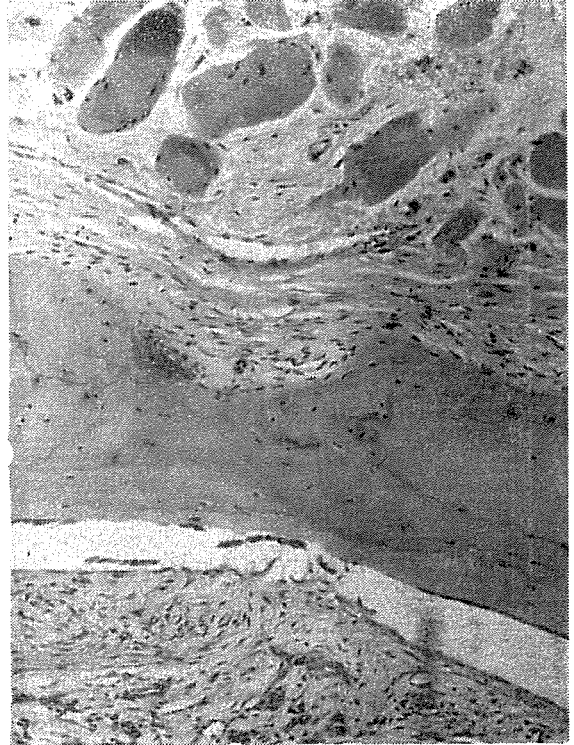


Fig. 7



Evidence of left fronto-parietal craniotomy with removal of the greater part of the lesser and greater wings of the sphenoid. No evidence of new pathological changes.

Comment

Although the patient was operated upon for excision of a sphenoid wing meningioma, there was already a suggestion that it was a peculiar and unusual vascular tumour.

Histological examination of the specimens removed during the operation revealed the real nature of the growth. It gave us also an explanation of the radiological report which showed the presence of a mixture of coarse trabeculae and large vascular channels possibly with some sclerosis at the pterion and the presence of an area in which the bone is hypertranslucent. All these changes may be considered typical of a bone haemangioma.

It explains also the changes seen in the left carotid arteriogram, namely the hypertrophy of the middle meningeal artery and the fact that some of the vascular spaces in the tumour were of aneurysmal dimensions and that the contrast medium pooled in them for a considerable time. Though the great and lesser wings of the sphenoid were mainly involved, the growth extended to the roof

(frontal bone) and to the lateral side of the orbit (zygomatic bone).

The changes found in the X-Ray examination carried out one year after the operation confirmed the fact that the tumour had no invasive character. (Fig. 8.)

A review of the literature on bone hemangiomas did not show any report of this kind of tumour in the orbital bones.

I would like to thank Mr. L. Walsh, Mr. K.J. Zilkha, Dr. G. du Boulay, Dr. G.P. Mair and Dr. H.A. Sissons for use of their reports and Dr. A. Mercieca for X-ray work.

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