

- value of rational biopsy: tissue culture of chorioretinal biopsies. *Trans Ophthalmol Soc UK* 1983;103:475-9.
12. Chan C-C, Palestine AG, Davis JL, *et al.* Role of chorioretinal biopsy in inflammatory eye disease. *Ophthalmology* 1991;98:1281-6.
 13. Martin DF, Chan C-C, de Smet MD, Palestine AG, Davis JL, Whitcup SM, Burnier MN, Nussenblatt RB. The role of chorioretinal biopsy in the management of posterior uveitis. *Ophthalmology* 1993;100:705-14.
 14. Freedman MI, Folk JC. Metastatic tumours to the eye and orbit: patient survival and clinical characteristics. *Arch Ophthalmol* 1987;105:1215-9.
 15. Reese AB. *Tumours of the eye*, 3rd ed. New York: Harper and Row, 1976.
 16. Keates RH, Billig SL. Metastatic uveal choriocarcinoma: report of a case with improvement after chemotherapy. *Arch Ophthalmol* 1970;84:381.
 17. Batsakis JG. Mucous gland tumours of the nose and paranasal sinuses. *Ann Otol Rhinolaryngol* 1970;79:557-62.
 18. Alessi DM, Trapp TK, Fu YS, Calcaterra TC. Nonsalivary sinonasal adenocarcinoma. *Arch Otolaryngol Head Neck Surg* 1988;114:996-9.
 19. Kenady DE. Cancer of the paranasal sinuses. *Surg Clin North Am* 1986;66:119-31.

Sir,

Proptosis Precipitated by Retinal Detachment Repair in a Patient with Occult Pituitary Tumour

A 51-year-old man underwent repair of a right inferior rhegmatogenous retinal detachment using cryotherapy and circumferential plombage. Post-operatively the retina was flat and the eye comfortable. Four days later the patient presented with a painful, red right eye. There was extreme chemosis and congestion of the upper tarsal conjunctiva (Fig. 1) together with a 3 mm axial proptosis not noted pre-operatively. Visual acuity was hand movements OD and 6/6 OS with correction. Pupillary reactions were intact and extraocular movements were very painful and generally slightly restricted. The intraocular pressure was 22 mmHg OD and 16 mmHg OS and the anterior chambers were deep.



Fig. 1. Gross chemosis and congestion causing prolapse of the upper tarsal conjunctiva.

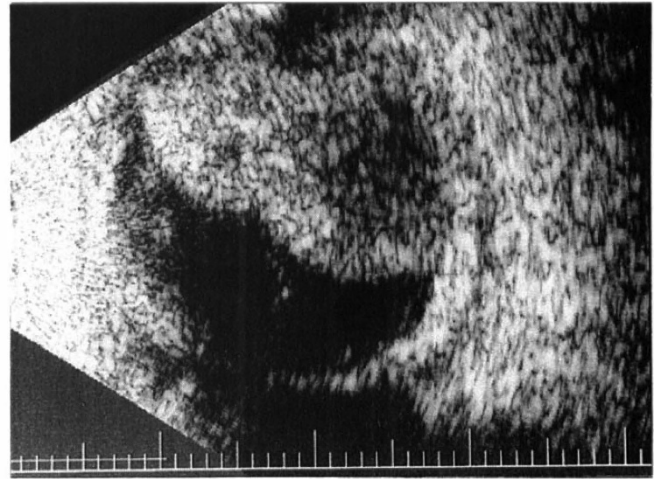


Fig. 2. B-mode ultrasound scan (vertical section) showing a large superior choroidal detachment filled with a substance most likely to be blood. Also shown is a thickened posterior sclera with fluid in Tenon's space; this inflammation may be in part post-operative and in part secondary to infection.

Funduscopy revealed a large superior choroidal detachment, the inferior retina being flat. Ultrasonography demonstrated the presence of a homogeneous echogenic substance (probably blood) filling the choroidal detachment completely, together with thickening of the posterior sclera (Fig. 2). The clinical signs improved somewhat with commencement of intravenous antibiotics but worsened when the intravenous route was substituted with oral antibiotics.

A diagnosis of orbital vein thrombosis was made and a CT scan with contrast showed a pituitary tumour invading and obliterating the right cavernous sinus (Fig. 3). A MRI scan demonstrated that the exact extent of the tumour was purely intracranial without orbital extension (Figs. 4, 5). The tumour was removed by a neurosurgeon and the absence of intraorbital extension confirmed. Histological examination revealed it to be a chromophobe adenoma.

Discussion

Extrasellar extension occurs in 14-22% of pituitary adenomas¹ and spread into the cavernous sinus may cause cranial nerve palsies and orbital venous stasis.¹ Choudhury² suggests that secondary venous stasis in the orbit may produce oedema and congestion of the orbital tissues which may cause proptosis; this view is supported by some authors³ while others⁴ emphasise the combined role of venous occlusion and an inflammatory response in the pathogenesis of the proptosis. In our case marked congestion and chemosis were present as was raised intraocular pressure on the affected side (probably also attributable to orbital venous stasis causing raised episcleral pressure); there was also an inflammatory response, as documented by the thickened posterior

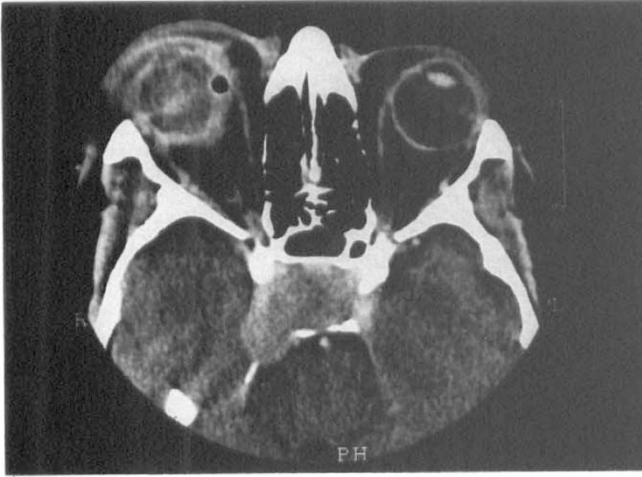


Fig. 3. Axial CT scan showing a pituitary tumour invading the right cavernous sinus. Proptosis of the right eye is also seen together with thickening of the sclera. Note: one end of the plomb is seen medially next to the globe.

sclera and fluid in Tenon's space seen on B-scan ultrasonography (Fig. 3), which was probably due to an element of infection. This explains the improvement of congestion, pain and proptosis with intravenous antibiotics.

The pathogenesis of the proptosis in this case is

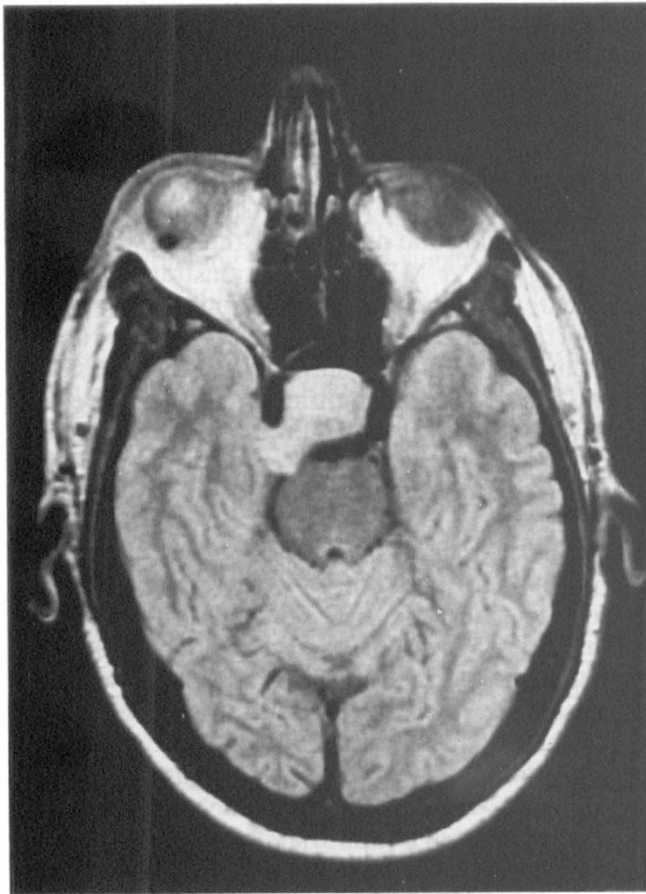


Fig. 4. T1-weighted axial MRI scan with gadolinium contrast. There is invasion of the right cavernous sinus by a pituitary tumour which has taken up contrast. Note: the lateral end of the plomb is seen temporally next to the globe.

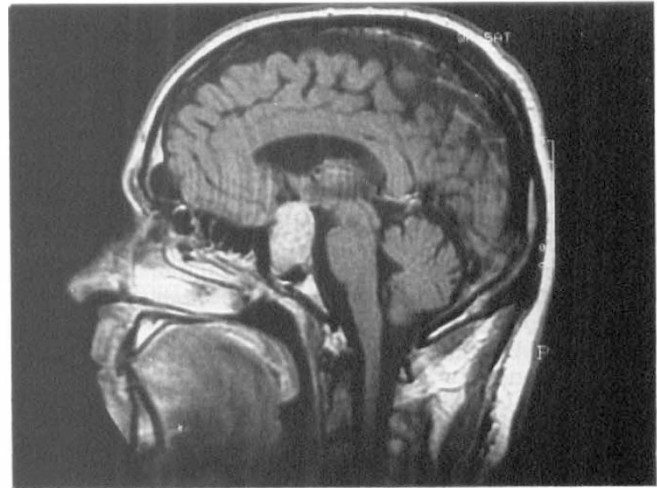


Fig. 5. T1-weighted sagittal MRI scan with gadolinium contrast. There is a large pituitary mass taking up contrast.

unusual since it was precipitated by repair of an inferior retinal detachment using a circumferential plomb. Venous blood from the orbit, and its contents, drains via the inferior and superior ophthalmic veins mainly into the ipsilateral cavernous sinus. Obliteration of the right cavernous sinus would lead to venous stasis in the superior ophthalmic vein and subsequent retrograde flow anteriorly either directly, or indirectly via the inferior ophthalmic vein, into the facial vein. Retinal detachment surgery can cause partial or complete venous obstruction⁵⁻⁸ within the orbit. An inferior circumferential plomb may have compromised the retrograde venous flow described above, leading to a relative rise in the orbital venous volume with an ensuing super-added infection thus causing proptosis, pain and marked congestion.

Unilateral proptosis due to an underlying pituitary tumour is rare^{3,4} and in all previously reported cases^{1,3,4,9-11} there was orbital invasion. Ocular and orbital ultrasound findings have not been described in those cases with orbital invasion but this may be in part due to the fact that only two of the previous cases were reported by ophthalmologists^{1,3} and in these no choroidal detachments were described. Although choroidal detachments have been described following retinal detachment surgery,^{7,8} in this case the choroidal detachment occurred opposite the surgery site and was filled with blood, making raised episcleral pressure secondary to orbital venous stasis the more likely cause.

In conclusion there can be little doubt that the relatively early presentation of this patient's pituitary adenoma (i.e. before orbital invasion) with unilateral proptosis was precipitated by retinal detachment surgery further impairing an already compromised orbital venous drainage leading to venous stasis and probably secondary infection.

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References

1. Sammartino A, Bonavolanta G, Pettinato G, Loffredo A. Exophthalmos caused by an invasive pituitary adenoma in a child. *Ophthalmologica* 1979;179:83-9.
2. Choudhury AR. Pathogenesis of unilateral proptosis. *Acta Ophthalmol (Copenh)* 1977;55:237-51.
3. Ortiz JM, Stein SC, Nelson P, Manning AB. Pituitary adenoma presenting as unilateral proptosis. *Arch Ophthalmol* 1992;110:282-3.
4. Daita G, Yonemasu Y, Hashimizu A. Unilateral exophthalmos caused by an invasive pituitary adenoma. *Neurosurgery* 1987;21:716-8.
5. Schwartz A. Retinal detachment surgery. *Ophthalmol Dig* 1975;13(2):79.
6. Packer AJ, Maggiano JM, Aaberg TM, *et al.* Serous choroidal detachment after retinal detachment surgery. *Arch Ophthalmol* 1983;101:1221-4.
7. Chignell AH. Choroidal detachment following retinal detachment surgery without drainage of subretinal fluid. *Am J Ophthalmol* 1972;78:860-2.
8. Topilow HW, Ackerman AL. Massive exudative retinal and choroidal detachments following scleral buckling surgery. *Ophthalmology* 1983;90:143-7.
9. Jackson H. Orbital tumours. *J Neurosurg* 1962;19:551-67.
10. de Divitis E, Cerillo A. Adenome hypophysaire à développement intra-orbitaire. *Neurochirurgie* 1973;19:561-6.
11. Ross RJ, McEniery JM, Grossman A, *et al.* Massive prolactinoma with galactorrhoea in a prepubertal boy. *Postgrad Med J* 1989;65:403-6.

Sir,

Tuberculosis Presenting as an Orbital Mass Lesion in Childhood

A 4-year-old boy presented with a 1 week history of rapidly progressive swelling of the right lower eyelid and proptosis. CT imaging indicated an orbital mass lesion which was thought likely to be a rhabdomyosarcoma. Biopsy demonstrated caseating granulomatous inflammation.

Orbital tuberculosis is occasionally encountered in Asia and North Africa. It is very seldom seen in the West, and it is especially rare in children. The re-emergence of tuberculosis as a global public health problem justifies its consideration in the differential diagnosis of intraorbital extraocular space-occupying lesions.



Fig. 1. The patient at presentation.

Case Report

A 4-year-old boy presented to the eye department with a 1 week history of swelling of the right lower eyelid (Fig. 1). His parents were immigrants from Pakistan, but he had been born in the United Kingdom and had never been abroad. He had been admitted to a paediatric ward with cough and wheeze 1 month prior to this presentation, and had been discharged well after 24 hours, without treatment, and without a specific diagnosis.

On presentation to the eye department there was no pain and there were no other symptoms. He had been fully immunised according to his parents. There was no history of tuberculosis in family members. On examination, he appeared well and was afebrile. He achieved a visual acuity of 6/7.5 monocularly with each eye. There was a swelling of the right lower eyelid and a mass palpable in the orbit inferolateral to the right eye, causing slight proptosis. The lower eyelid had a dusky, bruised appearance and there was some restriction of abduction and elevation. Anterior segment examination was otherwise unremarkable, and the fundi were normal. There was no lymphadenopathy, and no other abnormalities on physical examination.

Investigations

Haematological investigations yielded Hb 12.1 g/dl, WCC $10.0 \times 10^9/l$, neutrophils $3.9 \times 10^9/l$, lymphocytes $4.7 \times 10^9/l$ and ESR 41 mm/h. The chest radiograph was clear, but reference to the examination performed previously on the paediatric ward