

Spontaneous orbital haematoma

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Abstract

Spontaneous orbital haematoma is uncommon in ENT practice. The sudden presentation of proptosis and diplopia may guide the differential diagnosis towards more common pathologies such as an intraorbital complication of acute sinusitis or neoplasm of the orbit. The diagnosis by computed tomography (CT) scan, the management of this orbital disease and the literature in this field are discussed.

Key words: Orbital Diseases; Sinusitis; Tomography; X-Ray Computed

Introduction

Spontaneous haematoma of the orbit is a rare ENT complaint. It usually follows trauma to the orbit and is less likely to be due to vascular anomalies and tumours in the orbit. This type of pathology is usually treated by the ophthalmologist, except when the diagnosis is unclear and a suspected sino-nasal cause requires a multidisciplinary approach with the consultation of an otorhinolaryngologist. We present a case of a patient with sudden onset of proptosis and diplopia with a mismatch of clinical and radiological findings. The remainder of this entity may help the ENT surgeon in the differential diagnosis in such cases and the correct interpretation of the radiology.

Case report

A 17-year-old man presented to the local Ophthalmology department with a 24-hour history of sudden onset of pain around the left eye and associated diplopia. On clinical examination there was left proptosis and mild superomedial orbital inflammation. The visual acuity in the affected eye was 6/9 improving to 6/5 on pinhole, with no alteration in the colour vision. There were some choroidal retinal folds but no disc swelling and no afferent defect. A preliminary diagnosis of left orbital cellulitis was made and a CT scan of the orbit and sinuses was obtained to exclude intraorbital abscess. This was reported as thickening of the skin around the left orbit but the paranasal sinuses were surprisingly thought to be clear and no abnormal orbital collection was identified. After little improvement on intravenous antibiotic therapy for five days the patient was referred to a tertiary Ophthalmology department where the initial scans were subsequently reviewed, showing an opaque left frontal sinus with an intraorbital collection (Figure 1). Immediate referral to our ENT department for drainage of the left intraorbital and frontal sinus abscesses took place.

On admission there was a diagnostic discrepancy, as the clinical findings did not correlate with the radiological ones. The diagnostic possibility of an intraorbital space-occupying lesion was postulated and a combined endoscopic and external exploration was carried out. At this procedure a large subperiosteal collection of old blood was drained from the orbit leading to immediate resolution of

the proptosis. The blood collected in the frontal sinus was drained endoscopically via access through the frontal recess. The patient was discharged the following day with complete resolution of this symptoms.

Discussion

Spontaneous orbital haemorrhage is an unusual condition. The great majority of the cases in which proptosis and diplopia are presenting symptoms are due to an intra-



FIG. 1

CT scan, coronal view of the orbit and paranasal sinuses. Left superomedial intraorbital collection associated with a fully opaque ipsilateral frontal sinus. No bone defect is seen in this section.

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TABLE I
AETIOLOGY OF ORBITAL DISEASE PRESENTING WITH PROPTOSIS
AND/OR DIPLOPIA IN CHILDREN AND ADULTS

<i>Congenital</i>	craniofacial development malformations orbital cyst	
<i>Inflammation</i>	infective	preseptal and orbital cellulitis
	non-infective	pseudotumour Wegener's granulomatosis
<i>Endocrine</i>	dysthyroid eye disease	
<i>Neoplasm</i>	dermoid cyst	
	cavernous haemangioma, orbital varices (orbital haemorrhage)	
	neutral	nerve sheath meningioma
	tumours	optic nerve glioma neurofibroma
	rhabdomyosarcoma	
	neuroblastoma	
	lacrimal	benign pleomorphic
	tumours	malignant pleomorphic adenocarcinoma
	lymphoid	benign ('reactive')
	tumours	malignant (lymphoma)
	leukaemia	
	secondary	lid, eye, sinus, intracranial
	tumours	metastatic (breast, lung, prostate)

orbital complication of acute rhinosinusitis. In this situation pus within an obstructive paranasal sinus breaches the boundaries of the orbit to form a collection, that may be extra- or intra-periosteal. The condition is usually associated with an upper respiratory tract infection and usually significant local and systemic symptoms of the infection. The clinical findings are corroborated by appropriate imaging (coronal plus or minus axial CT scanning of the orbit and paranasal sinuses) so the absence of bone erosion does not necessarily exclude the diagnosis.

Several reports in ophthalmological and paediatric journals describe the condition of spontaneous intraorbital haematoma.¹⁻⁸ The causes of orbital disease⁹ in children and adults that present with proptosis and diplopia are numerous (Table I).

The aetiology of orbital haemorrhage has been classified into three groups:⁵

- (1) trauma (the most common);
- (2) masses, such as vascular malformations and tumours; and
- (3) spontaneous haemorrhage, which is a very rare event (thought to be due to a sudden increase in intraorbital pressure or systemic disease).

Varices¹⁰ are a subgroup of the vascular malformations, and these can again be subdivided in two groups: primary (venous malformations, traumatic lesions or haemangioma) and secondary (arterio-venous malformations or a carotico-cavernous fistula). One of the characteristics of the intraorbital venous system is the lack of valves,¹¹ a feature that explains how the pressure can be transmitted directly from the orbit into the frontal sinus, as seen in this case, producing an opaque (blood-filled) frontal sinus. The radiological findings can be misinterpreted as an infective process originating from the frontal sinus, and extending into the orbit, rather than the unusual scenario of a spontaneous rupture of an orbital varix.

In this case after CT scan a soft tissue lesion is visible with homogeneous density at the superomedial aspect of the orbit, displacing the globe inferiorly. CT has proven to be the initial examination of choice for a suspected space-occupying lesion in the orbit,^{12,13} because it offers good evaluation of the intraorbital lesion and its relationship with the surrounding structures. However, in suspected tumours or vascular lesions of the orbit magnetic

resonance imaging (MRI) (with gadolinium-DTPA) and colour-flow Doppler imaging¹⁴ are the preferred second line of investigations as far as imaging is concerned, the latter one having the advantage of being non-invasive, dynamic and avoids the use of contrast medium.

Conclusion

Spontaneous intraorbital haematoma is an uncommon diagnosis for the clinical scenario of periorbital inflammation, proptosis and diplopia in ENT practice. The surgeon must think of all possible differential diagnoses apart from the most common infective and neoplastic ones. Radiology in the form of CT scanning is still the preferred baseline investigation for intraorbital lesions, with MRI and colour-flow Doppler available as complementary imaging to aid the surgeon when an exploratory and/or therapeutic procedure is to be undertaken.

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