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BILATERAL PROPTOSIS CAUSED BY ORBITAL MYOSITIS*
A Case Report

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SUMMARY: Aydın K, Narin N, Erkılıç K, Kurtoğlu S, Hallaç İK, Poyrazoğlu MH. (Departments of Pediatrics and Ophthalmology, Erciyes University Faculty of Medicine, Kayseri, Turkey). Bilateral proptosis caused by orbital myositis: a case report. Turk J Pediatr 1998; 40: 135-138.

Proptosis, unilateral or bilateral, is a frequent indication for medical evaluation and orbital computed tomography. The most common cause of proptosis in adults and children is inflammatory disorders. Orbital myositis is a subgroup of the orbital pseudotumor syndrome in which one or more of the extraocular muscles are primarily infiltrated by an inflammatory process. Computed tomography and ultrasonography showed enlargement of one or more extraocular muscles in orbital myositis.

In our case, we observed clinically and by orbital computed tomography, evidence of isolated bilateral extraocular muscle swelling after upper respiratory tract infection. Proptosis and other findings were spontaneously and completely resolved after twenty days. Because proptosis caused by orbital myositis is extremely rare in children and there is limited information in the literature, this case was reported.
Key words: proptosis, orbital myositis, childhood.

Protrusion of the eyeball is called proptosis or exophthalmos and is the result of the expansion of tissue within the orbital cavity. Expansive lesions may be inflammatory, neoplastic, cystic or vascular. Bilateral involvement generally indicates a systemic disease, such as Graves' disease[1]. Orbital myositis is a subgroup of the orbital pseudotumor syndrome, the latter term being applied to inflammatilon of any orbital soft tissues, including fat, lacrimal gland, connective tissue and muscles[2]. Initial features of acute orbital myositis may include pain, proptosis, diplopia and conjunctival chemosis[2-6]. Cases of orbital myositis caused by upper respiratory tract infections have recently been reported[2-6].

Case Report

A six-year-old boy developed acute bilateral proptosis, pain, conjunctival chemosis and eyelid swelling. There was a history of upper respiratory infection ten days previously. On examination, bilateral proptosis of six mm, chemosis and eyelid swelling were found (Fig. 1). Fundoscopic examination and visual

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acuity were normal. The patient was afebrile and otherwise healthy. The white blood cell counts were 7400/mm^3, erythrocyte sedimentation rate 17 mm/h and C-reactive protein 5 mg/L. The other laboratory findings included antinuclear, antimicrosomal and antithyroglobulin antibody; total and free T3, T4 and TSH were normal. The first creatine kinase level was 271 U/L and after twenty days 64 U/L. Cranial computed tomography (CT) was normal and orbital CT showed bilateral diffuse enlargement of all the extraocular muscles (Figs. 2 and 3). Proptosis and other findings were spontaneously and completely resolved after twenty days without treatment (Fig. 4). The measurements (width) of the extraocular muscles on the first and 20th day are shown in Table I.

Fig. 1: Bilateral proptosis and eyelid swelling are seen.

Fig. 2: Orbital CT showed bilateral extraocular muscle enlargement.

Fig. 3: Orbital CT showed bilateral extraocular muscle enlargement.

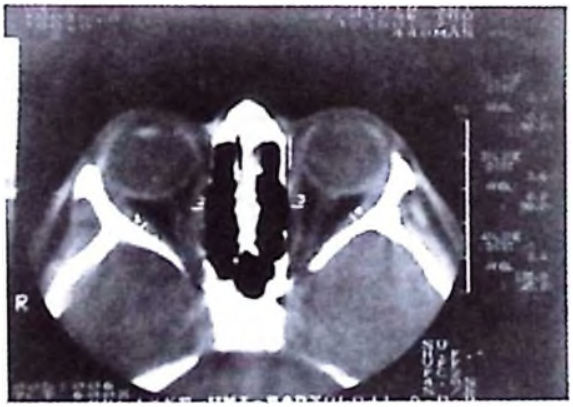

Fig. 4: Orbital CT was normal after twenty days.

Table I: Width of the Extraocular Muscles (mm)

	Onset	After Twenty Days
Right lateral rectus	5.5	3.2
Right medial rectus	6.2	3.4
Left lateral rectus	5.7	3.4
Left medial rectus	6.7	3.6

Discussion

A frequent cause of proptosis in adults and children is inflammatory pseudotumor. This entity consists of a heterogenous group of inflammatory diseases of unknown cause[1]. The site of inflammation is usually diffuse, onset is usually rapid and pain is often present[1,2]. Pulsating proptosis reflects the pulse of an orbital vascular malformation; varices produce intermittent proptosis[1]. Proptosis and periorbital edema due to diltiazem treatment have been reported in adults[7]. Orbital cellulitis is the most common cause of proptosis in children. The diagnosis is not difficult, because the clinical findings are characteristic[1]. Bilateral involvement generally indicates a systemic disease, such as Graves' disease[1]. Severe Graves' ophthalmopathy is uncommon in children. Proptosis occurs in more than half of the patients with childhood Graves' disease[8], while unilateral or bilateral proptosis in adults is due almost always to Graves' disease[1,9,12]. The extraocular muscles may swell up to eight times their normal size in Graves' disease[12]. Some degree of ophthalmopathy occurs in a high percentage of hyperthyroid patients. However, ophthalmopathy can also occur with hypothyroidism or with no detectable thyroid abnormality[1]. There was no thyroid abnormality in our case.

Idiopathic orbital myositis is a subgroup of inflammatory orbital pseudotumor. Initial features of acute orbital myositis may include pain, proptosis, diplopia and conjunctival chemosis[1,7-9,13]. While in children multiple extraocular muscles are usually involved, in adult patients only a single muscle is involved[13]. Computed tomography showed enlargement of one or more extraocular muscles in orbital myositis[2-4,6]. In our case, there was proptosis, chemosis and eyelid swelling and orbital CT showed bilateral diffuse enlargement of all the extraocular muscles. The differential diagnosis of extraocular muscle enlargement includes Graves' disease, idiopathic inflammation, systemic lupus erythematosus (SLE), Wegener granulomatosis, arteriovenous (A-V) malformation, carotid-cavernous fistula and metastasis[1-3,5].

Graves' ophthalmopathy and idiopathic ophthalmic inflammation are easily distinguished on clinical grounds: idiopathic ophthalmic inflammation is usually characterized by the acute onset of deep orbital pain and by an often dramatically rapid resolution, either spontaneous by or after oral administration of corticosteroids[2].

The extraocular muscles may be involved in cysticercosis. Computed tomography scan shows an orbital mass with an area of lucency and a spot of higher density that suggests a calcified Cysticercus[13]. In our case, there was no tomographic sign of cysticercosis. Some cases of orbital myositis are associated with orbital hemorrhage and ecchymosis[3]. However, acute orbital myositis should be included in the differential diagnosis of conditions that may be associated with spontaneous orbital hemorrhage and eyelid ecchymosis. Orbital myositis may be acute, subacute or recurrent. The acute form responds well to high doses

of oral corticosteroids. The subacute form of the disease responds to a lesser degree[2,4]. Orbital myositis caused by upper respiratory tract infections has recently been reported[2,6], as has orbital myositis secondary to lyme disease[14]. There was a history of upper respiratory tract infection in our case ten days prior to our examination. We have obtained with clinical and laboratory findings evidence of bilateral orbital myositis. Proptosis and the other findings were completely resolved without treatment after twenty days and there was no recurrence observed in the following six months.

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