

Orbital pseudotumor caused by a foreign body – a case report

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Abstract

The case of a patient with a foreign body in the orbit is presented. The presence of this foreign body induced an aggressively expanding pseudotumor, infiltrating the eyelids, orbital muscles and the sclera. The process of diagnosis, management and the results of treatment are described.

This case is noteworthy because of the atypical course of the disease in a patient with a foreign body following ocular injury.

Key words: foreign body, orbit, pseudotumor.

Introduction

Orbital pseudotumors represent an idiopathic, non-specific and rarely occurring disease of the orbit, with features of non-carcinomatous and non-inflammatory changes [1]. In accordance with this definition, the main condition necessary for the diagnosis of pseudotumors is the lack of any identifiable local or more general evidence which might be responsible for the growth. Hence, most authors are prepared to diagnose pseudotumors only after having excluded aetiology of an infectious or traumatic nature, those of an immunological or carcinomatous origin and general conditions that may cause changes in the orbit [2]. It is certain that pseudotumors are not a type of granulomatous or lymphatic tumor [3].

Nonetheless, immune response cells, in particular lymphocytes and different stages of local fibrosis and neovas-

cularisation are present in histopathological specimens of pseudotumor in newly formed connective tissue. Indeed, the relative proportion of inflammatory cells with respect to collagen fibers is used to differentiate the pseudotumor into the more frequently occurring inflammatory type versus the rarer fibromatous type [3,4]. Perivascular inflammatory changes and secondary inclusion of vessels occurs rather more infrequently, which testifies to the somewhat “atypical” histological pattern of the pseudotumor [3].

The case of a patient presenting with a pseudotumor caused by a metallic foreign body and confirmed histopathologically would seem to be interesting in the context of the two, somewhat contrary opinions on the aetiology of pseudotumors, where the condition for diagnosis of the pseudotumor requires: 1) the presence or 2) the absence of an inflammatory cause.

Case report

A 40-year old male patient, a plumber by occupation, was admitted to the Ophthalmology Department 17 days after an eye injury with saw. In the external region of the orbit soft, inflammatory oedema was identified. Neither exophthalmus, nor any disturbances in eyeball movements were observed and the anterior region of the eye was normal as well. In the upper temporal, peripheral part of the fundus, a yellow, convex formation which measured 1/4 dd and containing small haemorrhages was observed, together with some restricted retinal detachment. Visual acuity on admission was 5/7, IOP=17 mmHg. The CT scan revealed the presence of an intraorbital foreign body 4 x 6 mm in size, lying peripherally to the eyeball, as well as a small, soft tissue formation of density 36-40 H, which was probably inflammatory in origin.

An attempt to remove the foreign body by surgery was undertaken, but it could not be found in the surrounding tissue which contained marked pathological changes. The surgical procedure was finally limited to the evacuation of an orbital abscess, which was further treated with the application of systemic, topi-

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Figure 1. CT examination



Figure 3. Foreign body

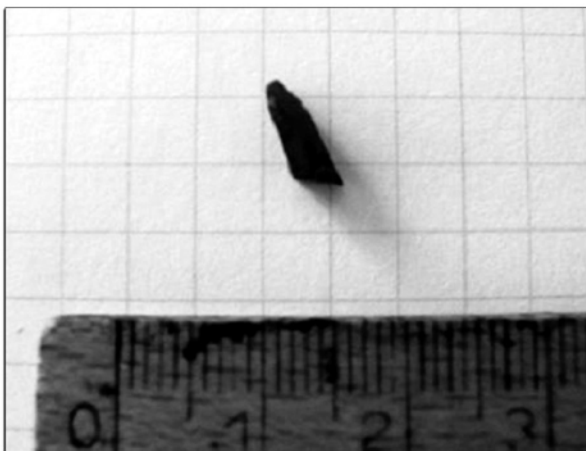


Figure 2. Tumor removed from the orbit

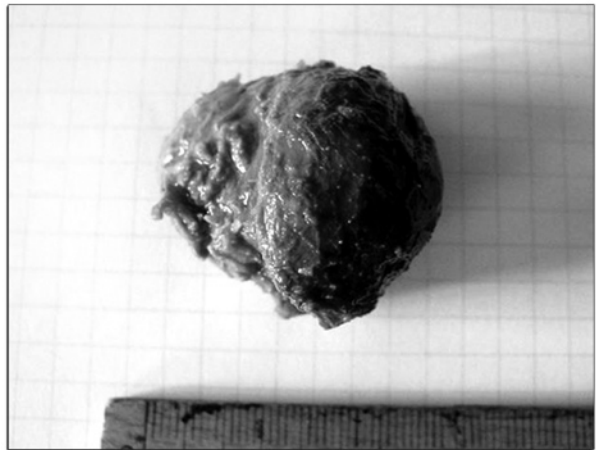


Figure 4. Patient 4 weeks after surgical procedure



cal antibiotics and steroids. In addition, photocoagulation of the detached retina was performed with an argon laser.

The patient was readmitted to the Ophthalmology Department after 7 months, not having attended any follow-up outpatient appointments. On admission a painless tumor of the right orbit was found. The tumor was hard, deforming the upper eye lid, 20 x 30 mm in size and restricting movements of the eyeball, which gave rise to diplopia when the patient attempted to look to the right. Visual acuity was 5/8 at this time and the ocular pressure was 24 mmHg. Computerised tomography confirmed the presence of a foreign body and also showed inflammatory, hypodense masses, 18 x 30 mm in size (Fig. 1). The patient was once more qualified for the surgical removal of the pathological formation, but he definitively refused consent to the suggested treatment.

The patient was examined again after a further period of 2 months. The fibroplasias were observed to have developed aggressively in the region of the upper lid, totally closing the palpebral fissure. Visual acuity was 5/16, IOP=22 mmHg. Eyeball movement was highly restricted. Inflammatory infiltration with eosinophilic granulocytes with vessel proliferation and fibrosis were found in the BAC sample. Other diagnostic tests did

not show any deviations from normal. Therapy with antibiotics and steroids did not lead to any improvement. Finally with the patient's agreement further surgical treatment was performed. During surgery, a hard tumor was dissected out, 40 x 35 x 25 mm in size, which was joined by solid, impacted connective tissue to the periosteum of the upper and lateral wall of the orbit. Fibrous adhesions were separated from the internal part of the eyelid and tarsus and also from the lateral surface of the sclera. The lateral and superior rectus muscles were not found, apparently because of tumor infiltration. A metallic foreign body, 6 x 3 x 2 mm in size was finally removed. The pathomorphological diagnosis was: *Pseudotumor inflammatorius*. On discharge from hospital, the patient's visual acuity was 5/10, IOP=12 mmHg. Right eyelid ptosis and partial restriction of eyeball movements were diagnosed. During fundus examination and ultrasonography, retinal detachment was not found (Fig. 2, 3).

Follow-up examination at 4 weeks post-surgery, revealed a satisfactory cosmetic effect with regard to the position of the eyelid as well as the range of movement of the eyeball, which was only minimally restricted. Visual acuity was 5/8, IOP=14 mmHg. Slight diplopia occurred only when patient looked to the right (Fig. 4).

Discussion

The definition of pseudotumors presented in the introduction refers only to those changes which may be described as an idiopathic inflammation of the orbital tissues. Nevertheless, many authors point to the role of infections, autoimmune diseases and anomalous wound healing as potential causes for the development of pseudotumors [3,5,6]. It seems very probable that in the case presented here, the presence of a foreign body was the direct reason for the occurrence and aggressive growth of the tumor [7,8].

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