

A Case with Ocular Siderosis Due to Intraocular Foreign Body Retained for Eighteen Months

On Sekiz Aydır Göz İçinde Kalan Yabancı Cisim Nedeniyle Oküler Siderozisli Bir Vaka

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ABSTRACT

42 years old, male patient admitted to our clinic with pain, burning and blurred vision on the left eye. In his history, there was a corneal foreign body extraction 18 months ago. His visual acuity was in light perception level. Pupil was mid dilated and direct and indirect light reaction was not seen. Since orbital tomography demonstrated intraocular foreign body, we planned vitreoretinal surgery, cataract extraction and intraocular lens implantation. We represented the result of vitreoretinal surgery in late noticed ocular siderosis and the appearance of the iron deposits on the pathological material of the anterior lens capsule.

Key Words: Ocular siderosis, intraocular foreign body, vitreoretinal surgery.

ÖZ

Kırk iki yaşındaki erkek hasta, kliniğimize sol gözünde ağrı, yanma hissi ve bulanık görme şikayeti ile başvurdu. Hikayesinden 18 ay önce korneadan yabancı cisim çıkarılması olduğu öğrenildi. Görme keskinliği ışık hissi düzeyindeydi. Pupil mid-dilateydi ve direkt ve indirekt ışık reaksiyonu görülmedi. Orbital tomografide, göz içi yabancı cisim saptanması üzerine, vitreoretinal cerrahi ve katarakt ekstraksiyonu ve göz içi merceği implantasyonu planlandı. Biz, geç saptanmış oküler siderozisde vitreoretinal cerrahi sonucunu ve lens ön kapsülünün patolojik materyalinde demir birikiminin varlığını gösterdik.

Anahtar Kelimeler: Oküler siderozis, göz içi yabancı cisim, vitreoretinal cerrahi.

INTRODUCTION

Ocular siderosis is a clinical situation caused by accumulation of the emitted iron molecules from intraocular foreign bodies. Heterochromia, midriasis, deposition of the iron on the corneal endothelium and anterior capsule of the lens, cataract and retinal pigment changes are the clinical findings.¹ Unless the patients complain about vision loss, It may be asymptomatic.^{2,3} But there is usually a ocular trauma history. About 8 to 10% of the intraocular foreign bodies are intralenticular foreign bodies and more often than not patients seek medical care for decrease in vision due to cataract.¹ In this study, we aimed to represent the result of vitreoretinal surgery in late noticed intraocular foreign body with ocular siderosis and the appearance of the iron deposits on the pathological material of the anterior capsule.

CASE REPORT

42 years old male admitted to our clinic with pain, burning and blurred vision on the left eye. In his history we learned that 18 months ago, while he was working in building construction, he faced with corneal foreign body removal from the left eye by an ophthalmologist. In his ophthalmologic examination, best corrected visual acuity was 20/20 on the right eye and light perception on the left eye. The left pupil was mid-dilated and direct and indirect light reaction was not seen. Intraocular pressure was 6 mmHg and neither corneal foreign body nor corneal scar in left eye was not seen. The cornea was diffusely blurred in left eye (Figure 1a). Anterior chamber depth was normal and cell was not seen. After the dilatation, iron deposits was better visualised on the anterior and corticonuclear cataract was seen (Figure 1b). Because of fundus could not be evaluated by the help of 90 D indirect lens, ocular ultrasound was done and retinal detachment was determined. Due to suspicion from ocular foreign body, computed tomography was performed. A foreign body on the nasal side of the pars plana, close to the lens was seen (Figure 2a,b). An informed consent form was taken from the patient.

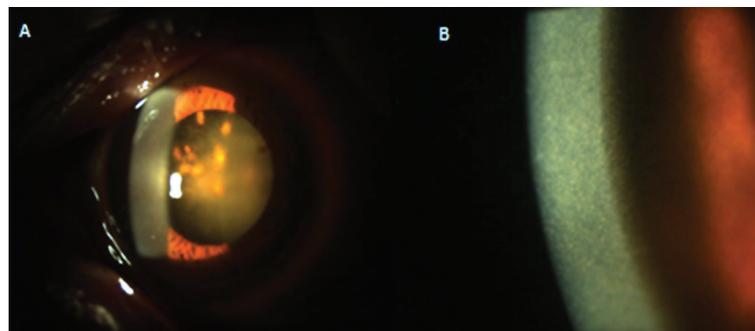


Figure 1a,b: Preoperative anterior segment view of the case. Cataract and iron deposits on the anterior capsule (a). Diffuse corneal haze due to siderosis (b).

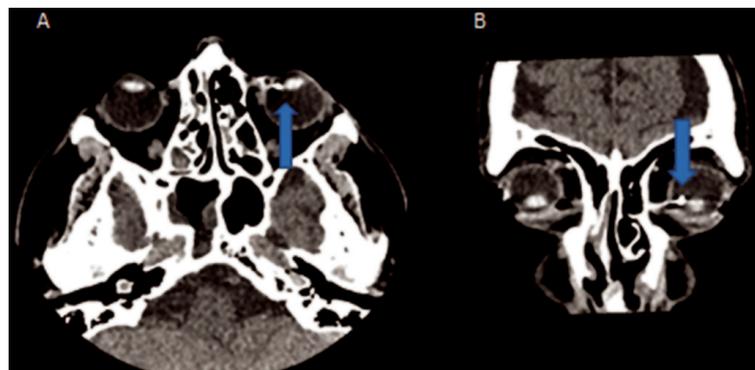


Figure 2a,b: Orbital computed tomography of the case. Hyperreflective foreign body close to lens is seen on the horizontal section (a). Hyperreflective foreign body close to lens is seen on the sagittal section (b).

When the patient was diagnosed as ocular siderosis, we prescribed 1mg/kg oral steroid prior to surgery. At the surgery we combined phacoemulsification and sutureless 23 G pars plana vitrectomy to extract the foreign body. During surgery, foreign body was extracted via posterior capsulorhexis, anterior chamber and corneal incision. Figure 3a shows the foreign body during extraction. During surgery retina was ischemic and in grey colour. Folds and fibrotic bands on the macula were seen. The retina was reattached and gas tamponade was performed. Visual acuity was light perception at postoperative first day. The cornea was minimal edematous and anterior

segment reaction with tyndall 3+ was seen. We prescribed the patient topical prednisolone acetate 1% and moxifloxacin %1 per two hours, cyclopentolate 1.0% 3 times a day for a week. At the end of postoperative first week, his visual acuity was at the light perception level. Anterior segment reaction with tyndall 1+ and fibrinous reaction on the intraocular lens was seen (Figure 3b). Attachment and ischemic of retina was seen in fundus examination.

The anterior lens capsule material taken during surgery was sent for histopathological examination. The material was stained with hematoxylin-eosin and Prussian blue. Specimen was seen as dyed at the Figure 4a,b.

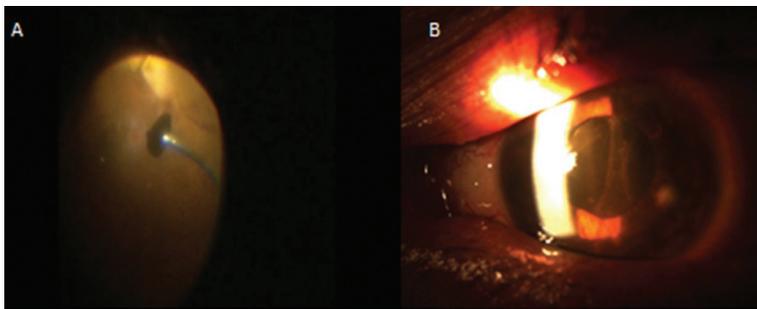


Figure 3a,b: Intraoperative and postoperative photographs of the case. Intraoperative view of the foreign body (a). Fibrinous membrane on the intraocular lens at the end of postoperative first (b).

DISCUSSION

Siderosis should be diagnosed and treated before the iron ions dispersed to all ocular tissues which ends with cell death due to destroyed cell membrane and enzyme inactivation by strong oxidants. Cataract formation may be the early sign for diagnosis of siderosis and this may also be related with intralenticular foreign body.²⁻⁴ If posterior segment is not affected by siderosis, visual acuity may not be disturbed very much.^{5,6} But in late term siderosis as in our case, although foreign body was extracted with successful surgery, results could not be satisfactory.⁷ Even if the surgery did not change the visual prognosis in our case, intraocular foreign body should be removed to cease ocular inflammatory process and to prevent phthisis.

Electroretinography (ERG) could be used for estimating prognosis and evaluation of the retinal involvement in patients considered as ocular siderosis.⁸ If ERG recordings are weak, retina is already affected. We did not plan to do electrophysiologic tests, because the retina was detached in our case.

In ocular siderosis not yet diagnosis patients, the iron deposits on the anterior lens capsule can be evaluated as iris pigments on biomicroscopic examination (Figure 1a). We showed hemosiderin deposits as histopathologically. Special stain like Prussian blue was used to confirm the presence of iron pigments in the anterior capsule (Figure 4).

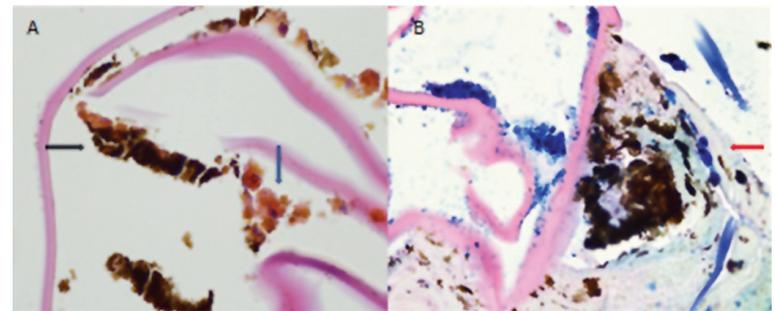


Figure 4a,b: The view of anterior capsule pathologic specimen taken during surgery. Several macrophage were seen light Brown colored due to the presence of hemosiderin deposition (Blue arrow) and some dark Brown colored epithelial cells with melanin pigment (Black arrow) were seen in left side of the image (HE-x400), (a). Blue stained macrophages (Red arrow) were seen blue colored stained with Prussian blue stain in the right peripheral region of the image and dark Brown cells with melanin pigment were not stained blue due to the absence iron (Prussian blue-x400), (b).

In the literature, some patients with ocular trauma history, although clinically and with imaging modalities there was not any identified foreign body, foreign body might be detected during cataract surgery.⁸

In all patients with ocular trauma, we should suspect foreign body. That's why we should examine the patient carefully and get detailed history. Also all necessary imaging modalities should be used. Despite this, if foreign body could not be detected in suspecting ocular siderosis cases, early surgery should be planned.

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