Non-recordable Electroretinogram in Siderosis Bulbi might not indicate poor visual outcome

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Abstract

Purpose: to report a case of Siderosis Bulbi that attained a good postoperative visual outcome despite of non-recordable Electroretinogram.

Method:
Case report

Results:
an 11-year-old girl with ocular Siderosis Bulbi in the left eye was referred to our department for management of complicated cataract and Intraocular foreign body 34 months following the initial trauma. Although the Photopic and flicker Electroretinogram was non-recordable, post-operative best corrected visual acuity following pars plana lensectomy and Intraocular lens implantation was 20/25.

Conclusions:
A non-recordable Electroretinogram in Siderosis Bulbi might not indicate a poor visual outcome after surgery.
Introduction:

Siderosis Bulbi is a sight threatening complication of a retained iron-containing Intraocular foreign body and may occur 18 days to 8 years after ocular injury. The clinical findings include iris heterochromia, pupillary mydriasis, cataract, secondary glaucoma and retinal pigmentary degeneration (O-Dufty D, Salmon JF. )

The electroretinographic response is initially hypernormal, but gradually diminishes with progressive siderotic degeneration (Duke Elder SS, ed). The visual potential in eyes with Siderosis Bulbi may be excellent if the siderotic changes stabilize or improve, and if the optic nerve and macula have not been injured. Vision may be very good even in eyes with a half-normal ERG response (Knave B. 1969 & Weiss el al 1997).

CASE REPORT: Figures(1,2):

An 11-year –old girl living in a developing country was referred to the vitreoretinal department for management of a neglected Intraocular foreign body in her left eye. Her father gave a past history of something hitting her left eye 34 months ago, while she was watching him hammering metal on metal. Medical report given to the patient by that time, stated the presence of left small upper lid wound, self sealed wound (site and size not mentioned) and an intraocular foreign body on B-scan ultrasonography. The child was managed conservatively and was discharged with the intraocular foreign body unextracted due to lack of facilities. About 2 years after the injury, the father noticed a white pupillary reflex in the girl’s left eye. The local ophthalmologist told him that she developed cataract and has to be referred to a vitreoretinal center for cataract extraction and Intraocular foreign body removal.

When presented to our hospital the uncorrected visual acuity was 20/20 in the right eye and hand motion in her left eye. Examination of the right eye was unremarkable. External examination of the left eye revealed the presence of anisocoria with the left pupil larger than the right, sluggish direct and consensual light response. As compared to the right eye, afferent pupillary defect, and rusty coloured iris.
pressure was 12 mmhg. Slit lamp examination revealed the presence of total white cataract with no fundus view. There was anterior subcapsular brownish coloration. Plain films of the left orbit and B-scan ultrasonography of the left eye showed a query intraocular foreign body. Photopic and 30 Hz Flicker ERG (expressing the cone system) showed normal ERG pattern in the right eye and nonrecordable response in the left eye (figure 1). A diagnosis of siderosis bulbi with total cataract was done.

Based on the father’s cosmetic concern of the white cataract and after explaining to him the postoperative visual prognosis under such circumstances is very poor, a left pars plana lensectomy and Vitrectomy was done with implantation of single piece, 19 Diopter, 7-mm optic Intraocular lens on the anterior capsular remnants. No intraocular foreign body could be detected inspite of thorough examination using wide field viewing system and indirect ophthalmoscopy with scleral indentation. Intraoperatively, the retina was totally attached and showed the presence of fine rust-like pigmentary granules throughout the whole retinal periphery and up to the arcades, the retinal vessels were sclerotic and extremely narrowed and the macula showed fine pigmentary stippling (figure 2). Optic nerve was within normal. Postoperative course ran smoothly. Surprisingly enough, best corrected visual acuity three weeks after surgery was 20/25 (+0.5 –2.5 x 175). The girl was uncooperative during automated perimetry, but confrontation method revealed the presence of markedly contracted field of vision in the left eye as compared to the right eye. The patient travelled abroad without further follow up.

**Discussion:**