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Case Report

Foreign body in ocular coats causing a pseudo optic nerve head shadow

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Abstract

Small intraocular foreign body in the outer coats of the eye may be wrongly interpreted as optic nerve head on ultrasound imaging. Such errors can be avoided by performing multiple sonography scans in different axes.

Keywords: Intraocular foreign body, Double optic nerve shadow, Pseudo duplication of optic nerve

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Introduction

Intraocular foreign body (IOFB) can lodge at various sites in the eye, often requiring surgical removal. While Computerized Tomography (CT) scan is considered as a gold standard diagnostic imaging modality,[1] ultrasonography (USG-B scan) is by far the most useful in pinpointing the relation of IOFB with other ocular structures.[2] USG-B scan is also necessary as it provides the critical information regarding coexisting eye pathologies such as vitreous hemorrhage and retinal detachment which may affect the final outcome. We hereby present the atypical sonography features of an IOFB lodged in the posterior outer coats of the eye.

Case report

A 23 year old male presented to us with a sudden loss of vision following hammer-chisel type of injury in left eye (LE) since 3 weeks. On examination LE BCVA was found to be 1/60 with an IOP of 6 mm Hg. Anterior segment and lid examination revealed no abnormality or possible entry site for IOFB, and there was dense vitreous hemorrhage in the retrolental area of the LE. Right Eye was within normal limits. Standardized USG-B scan using minimal pressure was done for posterior segment evaluation. Longitudinal scans revealed ''double optic nerve head shadow'' (Fig. 1). Transverse scan revealed a hyperechoic lesion with 100% reflectivity even at a low gain (46 dB) within the posterior outer coats of LE with posterior acoustic shadowing suggestive of IOFB (Fig. 2). NCCT head and orbit were ordered which confirmed a 2×1 mm metallic IOFB in the infero-posterior coats of the LE.

After the detailed informed consent, the patient was posted for LE globe exploration (in view of hypotony) followed by 23 G pars plana vitrectomy and FB removal. During vitrectomy, an encapsulated foreign body (FB) was found to be incarcerated in the sclera just below the optic disk along with an inferior and temporal 120 degrees retinal dialysis. Due to its location in the outer coats the FB was not

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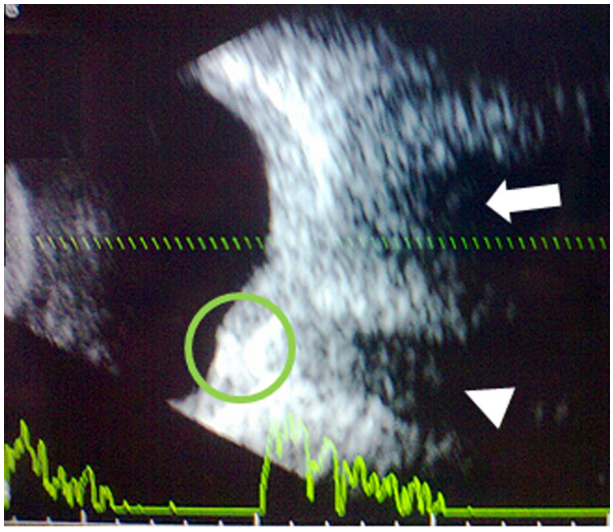

Figure 1. Ultrasound B Scan image depicting the true optic nerve shadow (arrow) along with the pseudo optic nerve shadow (arrow head). The encircled area represents the possible location of the foreign body.

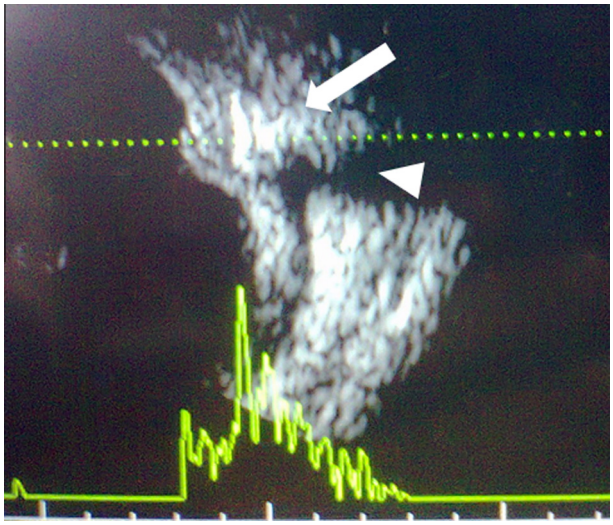

Figure 2. Ultrasound B Scan image depicting the foreign body in thickened ocular coats (arrow) seen as a hyperechoic lesion with 100% reflectivity and posterior acoustic shadowing (arrow head).

extracted and the surgery completed with Laser barrage around the site of FB and retinal dialysis with injection of silicone oil. One month post operative the patient had a BCVA of 6/24 with attached retina and IOP of 8 mmHg.

Discussion

While true double optic nerve head is a rare condition[3], imaging modalities such as CT scan and sonography have been used to decipher pseudo duplication which is caused by coloboma like disorders.[3,4] In contrast our case presents a situation where the USG- B scan picture was of optic nerve duplication. Therefore in such a scenario, obtaining multiple sonography scans in different orientations is helpful and the surgeon should not hesitate in obtaining a CT scan when in doubt. Another factor that helped us in reaching the diagnosis was the obvious history of hammer chisel injury, which may not be present in all the cases.

In this case, the small dimensions of the FB along with its presence in coats masked the high reflectivity in the longitudinal scan which was perhaps along the orientation of the smaller dimension of the FB (Fig. 1). The characteristic acoustic shadowing[5] however could still be seen, hence the ''Pseudo optic disc shadow''. Transverse scan however was oriented along the longer dimension of the FB and revealed a distinctly hyperechoic lesion corresponding to the FB.

FB in posterior coats, especially the ones near optic nerve head, can thus present like a double optic nerve head shadow on sonography and must be interpreted cautiously.

Conflict of interest

The authors declared that there is no conflict of interest.

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