Case Report

COMBINED PARS PLANA VITRECTOMY AND PENETRATING KERATOPLASTY TO MANAGE A CASE OF PENETRATING GLOBE INJURY FOLLOWING A GUN-SHOT ASSAULT

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ABSTRACT

Ocular trauma cases are a common entity in daily practice. Visual morbidity can range from very mild to complete loss of vision and in some cases loss of the eye. We present a grim case of penetrating globe injury following a gun shot assault in a young male. At presentation, the patient had no vision and a mutilated eye ball. The patient underwent a combined open sky vitrectomy and a penetrating keratoplasty. Fortunately for the patient, the eye could be saved, which is a major achievement in such perforated cases. The patient did have vision in the eye but it was compromised due to the loss of intra-ocular structures and a pale optic nerve head.

INTRODUCTION

A 25 year old male presented to the casualty with an open globe injury in the left eye following a gun shot injury, one day ago. On evaluation the patient had denied perception of light. On clinical examination, there was iris prolapse through the mutilated cornea with disorganized anterior chamber structures. The patient was administered general anesthesia. The injured corneal tissue was removed. Following which 23 gauge pars plana vitrectomy was done to remove the residual irido-lenticular structures and intraocular hemorrhage. The infusion was maneuvered to ensure sufficient prolapse of the vitreous. After the vitrectomy, a conventional penetrating keratoplasty was done. Intraoperative Siedel’s test was done to confirm absence of wound leak. Prophylactic intravitreal antibiotics (vancomycin and ceftazidime) were administered. The patient was put on broad spectrum double antibiotics and 1.5mg/kilogram body weight oral steroids, which was tapered gradually. Postoperative period was uneventful. At 1 month postoperative period the best corrected visual activity was 1/60 in the left eye. The corneal graft looked healthy. Fundus was stable although there was disc pallor [Figure] which explained the compromised vision.

Figure: a: Preoperative picture showing the perforated cornea and prolapsed uveal tissue
b: 14th Day postoperative image of an intact globe and stable cornea
c: 14th Day postoperative fundus image showing a stable retina and disc pallor

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Key Words:
Penetrating globe injury, penetrating keratoplasty, vitrectomy

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DISCUSSION

Ocular trauma has always been an important cause of visual morbidity. Quick assessment and management are vital to salvage vision and preserve ocular anatomy. Fujikawa A et al [1] emphasized the importance of pars plana vitrectomy in open globe injuries with posterior segment involvement. Roters S et al [2] also advocated a combined penetrating keratoplasty and pars plana vitrectomy with silicone oil injection to preserve the ocular status in trauma cases. The concerns of anterior segment complications as in graft failure and ciliary body shutdown were highlighted. Our patient, had a preserved graft along with normal intra-ocular pressure during the postoperative period. In open globe injuries with posterior segment involvement poor visualization poses as a therapeutic challenge. Dong X et al [3] studied the use of a temporary keratoprosthesis to do the pars plana vitrectomy followed by a penetrating keratoplasty in ocular trauma cases. Morishita S et al [4] described a case report of a traumatic retinal detachment following penetrating corneal injury where a 23 gauge combined endoscopic and wide angle viewing system was used to overcome the media opacity and manage the case. Similar to our case, Yoshimoto T et al [5] documented successful outcome with combined vitrectomy and penetrating keratoplasty in a patient with opaque cornea and having retinal detachment with proliferative vireo-retinopathy. In our setup, we didn’t have the access to a temporary keratoprosthesis, hence we proceeded with a combined open sky vitrectomy and a penetrating keratoplasty. The patient did well with an anatomically intact globe and having certain amount of vision preserved in the eye, in spite of suffering from such severe trauma which would have otherwise resulted into an evisceration.

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