Original Article

A Case Of Globe Rupture And Management Using Dermis Fat Graft

Dr. Kilari Sindhu[1], Aparna A[2], Dr Namratha Adulkar[3], Dr Abhay Lune[4], Dr Aditya Ganesh G[5]

1. Third Year Resident, Department of Ophthalmology, Dr DY Patil Medical College and Hospital, Pune, Maharashtra, India
2. Third Year Resident, Department of Ophthalmology, Dr DY Patil Medical College and Hospital, Pune, Maharashtra, India
3. Consultant, Oculoplasty Surgeon, Department of Ophthalmology, Dr DY Patil Medical College and Hospital, Pune, Maharashtra, India
4. Professor, Department of Ophthalmology, Dr DY Patil Medical College and Hospital, Pune, Maharashtra, India
5. Third Year Resident, Department of Ophthalmology, Dr DY Patil Medical College and Hospital, Pune, Maharashtra, India

Corresponding author:
Aparna A, Third Year Resident, Department of Ophthalmology, Dr DY Patil Medical College and Hospital, Pune, Maharashtra, India
DOI: 10.47750/pnr.2022.13.S09.568

Abstract

21-year-old female presented to the emergency department with alleged history of injury to left eye (LE) with mixer blade at high velocity in the night. Patient was diagnosed with a globe rupture and underwent primary management followed by (LE) enucleation with orbital implant with conformer and tarsorrhaphy. Implant extrusion was noted on follow up and managed by using a dermis fat graft and socket reconstruction. This case highlights using dermis fat grafts as a secondary measure to manage implant extrusions.

Keywords: Globe rupture, Enucleation, orbital implant, tarsorrhaphy, extrusion of the implant, socket reconstruction, dermis fat graft

Introduction:

Dermis fat graft (DFG) has been found to be effective in the cases of anophthalmic socket re-construction.[1] It is an effective technique in replacing the volume of the socket and may im-prove the anterior surface of the socket simultaneously.[2] More volume might have to be re-placed in the patients who have undergone multiple surgeries and cases of implant extrusion. In such cases dermis fat graft plays an important role.[2]

Case report

Here we report a case of 21year old female with history of mixer blade injury to the left eye managed with socket reconstruction using dermis fat graft (DFG). Patient was apparently asymptomatic one hour before coming to the hospital when she had alleged history of injury to left eye with mixer blade (sharp in nature) at high velocity while looking into the mixer jar. It was associated with sudden loss of vision, associated with pain and redness which was sudden in onset. Patient applied cloth packing against her left eye and was rushed to local private doctor near her residence. Patient was evaluated and referred to us for further management. Patient was counselled regarding the need

of surgery for removal of the eye and had undergone a surgery at our hospital. Ten days post-surgery, patient had come to the hospital with complaint of ball like structure expelling out of the eye and was readmitted in the hospital.

Ocular Examination:

(LEFT EYE) Vision: NO PL, IOP: digitally soft, Head posture: central, Eye brows: normal, Eyelashes are matted with discharge, Eyelid: laceration present over the upper eyelid 2x1mm lateral to medial canthus, Orbital margins: continuous, no crepitus, nontender on palpation, Anterior segment: corneoscleral tear present from 2-7'0 clock with uveal prolapse and hyphaema (fig.1) Fundus could not be seen.

Figure 1

Management

Primary management: Thorough cleaning of the discharge around eye was done and eye was covered with eye shield. Patient was started on intravenous antibiotics and pain killers. Surgical management: (Left eye) Enucleation + orbital implantation + conformer + tarsorrhaphy under general anaesthesia.

On follow up, Patient presented to ophthalmology OPD after10 days post-surgery with complaints of left eye extrusion of the orbital implant (fig. 2).

Figure 2

On examination (POD -10): Vision: no PL, head posture: central, Eyebrows, eyelashes and eyelids are normal. Orbital margins-continuous, no crepitus, non-tender

(LE) SOCKET EXAMINATION:

Symmetry: Left eye socket was symmetrical when compared with the fellow eye. Area of the socket: Area was assessed with the help of depth of the fornices. The depth of all fornices were normal on examination.

Volume: Volume of the left eye socket was normal on examination. Dry/wet socket: No active discharge

(LE) ORBITAL IMPLANT EXTRUSION

Patient was managed with LEFT EYE: SOCKET RECONSTRUCTION WITH DERMIS FAT GRAFT with TARSORRHAPHY (fig. 3) Socket was formed using dermis fat graft from gluteal region.

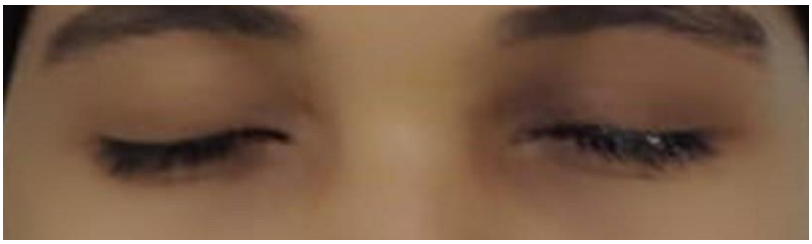

Figure 3

Conformer was placed to secure the fat graft. Tarsorrhaphy was performed post procedure.

On POD-01(after socket reconstruction) Socket was well formed, Tarsorrhaphy + insitu

Results

Dermis fat graft is a good way to overcome the problem of implant extrusion with good cosmesis.

Discussion

Dermis fat graft gained importance over the years as a primary implant in anophthalmic socket reconstruction because of the advantages and less risk of exposure and infection and no risk of extrusion.[1] dermis fat graft is used in primary enucleation cases, anophthalmic socket, enophthalmos, contracted socket, superior sulcus defects due to fat atrophy.[3]

Dermis fat graft can be taken from the upper lateral portion of the gluteal region. A superficial incision is made to dissect the epidermis of the dermis.[4] When it is done in the proper way, a petechial bleeding is noted on the surface of the dermis. Wound closure must be completed in layers to reduce tension and reduce the risk of breakdown. The dermis fat graft tissue is tucked under the eyelid by stitching it to the Tenon's capsule and conjunctiva. Finally, a conformer is placed before the conclusion of the surgery.[5] The most feared complication is graft loss second to necrosis or infection.

Successful DFG is said only when there is complete vascularisation, epithelialisation of the dermal surface and volume retention.[1] Disadvantages of DFG are increased risk of infection of the donor site, Dermis fat graft (DFG) may shrink and there is lack of predictability.[4] Spontaneous graft atrophy is reported is reported as 6-12.9%, so it has been advised to take 30% larger graft than the defect size.

References

1. Diab MM, Alahmadawy YA. Primary Dermis Fat Grafting for Socket Reconstruction: Retrospective Comparison of Electrocoagulation versus Scalpel Dissection for Epider-mis Removal. Clin Ophthalmol. 2020;14:2925-2933
2. Galindo-Ferreiro A, Khandekar R, Hassan SA, Al-Hammad F, Al-Subaie H, Artioli Schellini S. Dermis-fat graft for anophthalmic socket reconstruction: indications and outcomes. Arq Bras Oftalmol. 2018 Sep-Oct;81(5):366-370.
3. Jovanovic N, Carniciu AL, Russell WW, Jarocki A, Kahana A. Reconstruction of the Orbit and Anophthalmic Socket Using the Dermis Fat Graft: A Major Review. Oph-thalmic Plast Reconstr Surg. 2020 Nov/Dec;36(6):529-539.
4. Nentwich MM, Schebitz-Walter K, Hirneiss C, Hintschich C. Dermis fat grafts as pri-mary and secondary orbital implants. Orbit. 2014 Feb;33(1):33-8.
5. Alkhairy S, Baig M M, Pasha U A (October 17, 2021) Unilateral Anophthalmic Socket Reconstruction With Dermis Fat Graft. Cureus 13(10): e18834