

Gluing the Glued Patch: A Glue in Time Saves it all

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Abstract Customized glued sutureless patch grafts can be tried as a definitive treatment for restoring ocular integrity in smaller corneal perforations. Donor cornea in these grafts is first fashioned to fit the corneal defect by a lock and key pattern and then secured to the host with the aid of an ophthalmic sealant. Wound dehiscence after glued grafts is a serious sight-threatening complication that is rarely reported and warrants urgent intervention to restore ocular integrity. Presently described is a case of wound dehiscence post fibrin-glued patch graft managed timely by cyanoacrylate glue.

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Photo Essay

Customized glued sutureless patch grafts can be tried as a definitive treatment for restoring ocular integrity in smaller corneal perforations.¹ Donor cornea in these grafts is first fashioned to fit the corneal defect by a lock and key pattern and then secured to the host with the aid of a sealant. Wound dehiscence post-keratoplasty is a serious sight-threatening complication that warrants urgent intervention to restore ocular integrity.² Presently described is a case of wound dehiscence post fibrin-glued patch graft managed by cyanoacrylate glue.

A 30-year old female suffering from Rheumatoid arthritis presented with diminution of vision right eye. Slit lamp examination revealed an inferotemporal area of sterile corneal melt with prolapsing iris tissue from a 3.0×1.5mm

large perforation and positive Siedel's test. (Figure-1A-B) Corneal sensations, fundus examination and microbiological analysis were all uneventful. After obtaining informed consent and starting prophylactic antibiotics-steroid-lubricant combination and treatment for Rheumatoid arthritis, a customized full thickness corneal patch graft (3.0×1.5 mm oval shaped graft) apposed to the host with fibrin-protinin tissue adhesive (Tisseel VH, Baxter Healthcare Corp, Deerfield) was performed under general anesthesia. (Figure-1C) A bandage contact lens (BCL) was placed and preoperative medications were continued unchanged. Two weeks later, spontaneous inferonasal wound dehiscence with overlying epithelial defect and negative Siedel's test were noted. (Figure -1D) The graft was repositioned back gently and a drop of cyanoacrylate glue followed by BCL

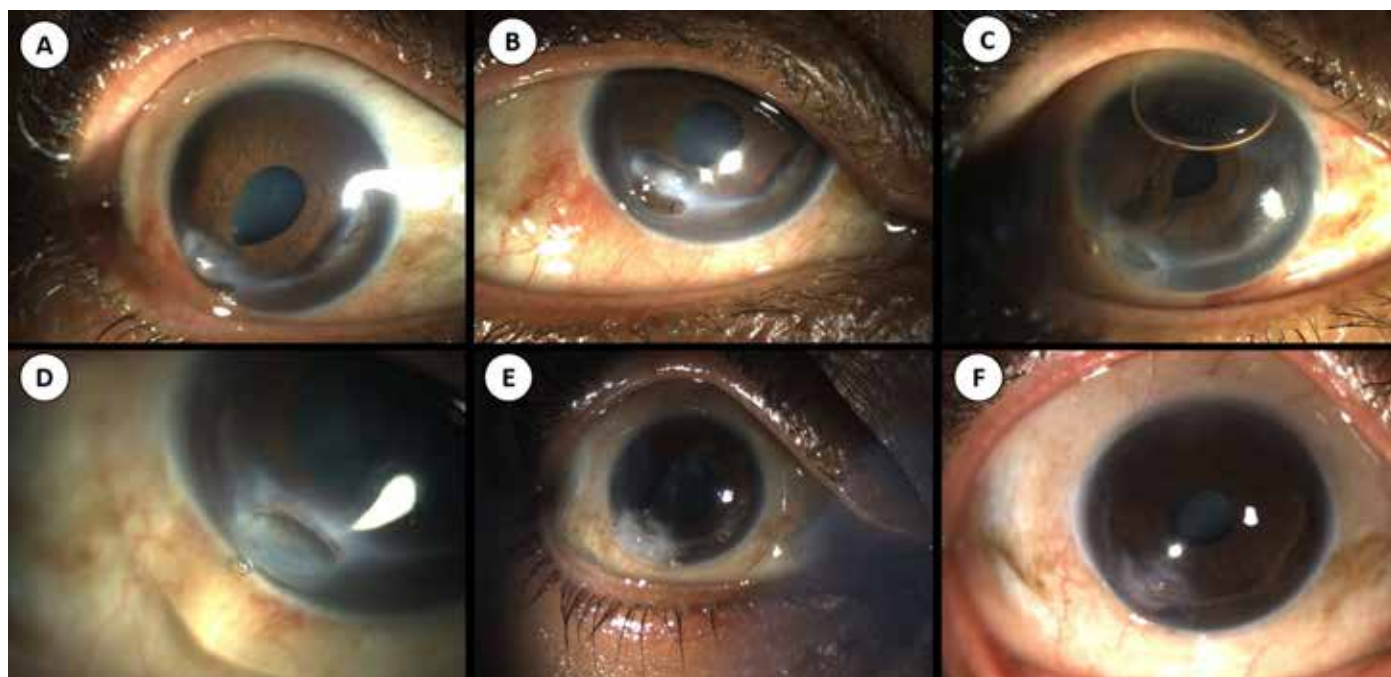


Figure 1: Figure 1A to 1F represent chronological clinical photographs of the patient; 1A and 1B show inferotemporal peripheral corneal perforation with uveal tissue prolapse, 1C shows a snugly fit graft and well-formed anterior chamber on post-operative day one, elevated graft margins suggestive of displaced graft and cyanoacrylate glue with bandage contact lens can be appreciated in 1D and 1E respectively, 1F shows well healed vascularized tissue at 5-months follow up.

was applied under topical anesthesia. (Fig-1E) At 5-months follow-up, the glue dislodged spontaneously leaving a well apposed graft, keratometry values of 45.88D/48.75D at 60°/150° and uncorrected visual acuity of 20/40 (compared to 38.30D/50.20D at 130°/50° and 20/120 respectively at presentation).(Figure -1F)

Wound dehiscence after sutureless patch grafts are rarely reported but can be encountered due to poor and unpredictable tensile strength of fibrin glue, as seen presently. Various modalities such as conjunctival flap, amniotic membrane graft, repeat fibrin glue application or sutured grafts and tectonic keratoplasty can be employed to salvage globe integrity in these cases. However, they carry their own complications such as risk of intense vascularization, transmission of infections, repeat dehiscence, suture-related complications and graft rejection respectively.³

Cyanoacrylate glue (CG) is an ophthalmic sealant that contains esters of cyanoacrylic acid with alkyl side chains.⁴⁻⁵ While CG has been used previously to manage wound dehiscence due to other causes, it's usage to seal a displaced fibrin-glued patch graft is being described for the first time. It is cheaper, quicker and easier to prepare than fibrin glue and its inherent antibacterial and anti-keratolytic activity make it a suitable choice for the present condition.⁴ Additionally, repeat superficial applications of this glue are also possible due to its limited histotoxicity.⁵ Nonetheless, various complications like conjunctival and corneal irritation, premature dislodgement, vascularization and masking of underlying microbial keratitis from poor visibility associated with its application require close monitoring till its dislodgement.

From the present clinical picture, it may be emphasized that CG may make a simple and feasible alternative to other major procedures in salvaging fibrin-glued corneal patch grafts.

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