

## A 270-degrees Banana Graft- a Case Based Learning

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**Abstract:** A 54 year old male presented to us with diminution of vision in his right eye from the last 6 months associated with watering. Patient had a positive history of joint pains for which he was on ayurvedic medication from a local practitioner and was also using topical steroids from the last 3 months from a local hospital. On examination, the patient had 270 degrees of cornea thinning in his right eye (RE) with posterior chamber intra-ocular lens in situ (Fig-1) and the other eye (Left eye) was having early lenticular changes with best corrected vision in RE being 5/60 with no improvement on pin hole (pH) and LE being 6/12 with pH 6/9. A phased approach was a key deciding factor in the management of this patient. After the control of active inflammatory phase of the disease alongwith the systemic evaluation with close liaison with a rheumatologist, the patient was surgically treated with a banana graft which proved fruitful in the successful management of the case

**Keywords:** Banana Graft, Corneal thinning, Crescent graft

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### I. Introduction:

Cornea patch graft has been advocated as the surgical procedure to treat variety of anterior segment pathologies. It involves patching the affected area with full thickness or partial thickness corneal donor tissue. The aim is to restore globe integrity and prevent further inflammation that could lead to devastating complications such as endophthalmitis. Cornea perforation and melting can occur in infectious keratitis, autoimmune diseases such as rheumatoid arthritis, ocular trauma and ocular surface disorder.

**Case:-** A 54 year old male presented to us with diminution of vision in his right eye from the last 6 months associated with watering. Patient had a positive history of joint pains for which he was on ayurvedic medication from a local practitioner and was also using topical steroids from the last 3 months from a local hospital. On examination, the patient had 270 degrees of cornea thinning in his right eye (RE) with posterior chamber intra-ocular lens in situ (Fig-1) and the other eye (Left eye) was having early lenticular changes with best corrected vision in RE being 5/60 with no improvement on pin hole (pH) and LE being 6/12 with pH 6/9. Systemic evaluation showed a normal hemogram profile, except for a raised erythrocyte sedimentation rate (determined by the Westergren method) 70 mm/h and a rheumatoid factor level of 15 IU/mL. The patient sought the opinion of a rheumatologist, who diagnosed the patient as RA positive and initiated treatment with oral immunosuppressants.

#### Phase 1- Control of Inflammation

To control his inflamed eye, topical prednisolone acetate 1% was prescribed six times per day with cycloimmune 0.1% twice daily. Oral steroids at a dose of 1mg/kg body weight and capsule doxycycline 100 mg twice daily were started. In addition, oral prednisolone 40 mg per day and oral methotrexate 7.5mg once weekly with 5mg folic acid were initiated in consultation with a rheumatologist. Topical hydroxyl-propyl-methyl-cellulose 0.3% was prescribed three times per day in the right eye, with precautionary use of protective eyewear.

#### Phase II- Banana Graft

Once the inflammation is controlled over a week with loading dose of immuno-suppressants and oral steroids being given, the patient was planned for a corneal patch graft (Banana Graft) which extended nearly 270 degrees to maintain the integrity of the globe and to prevent any perforation. The preparation for the crescent shaped corneal graft (Fig-2) posed a real challenge to snugly fit in the desired template of thinned out bed. A template was prepared using a drape sheet and marked in a desired shape with marker. The maximum width of the graft

was 4 mm which made us to lathe cut the donor button with a 6mm trephine but with a crescentic edge leaving a size of 4 mm. Then, the banana graft was a perfect fit in to the bed and was sutured with 10-0 Nylon interrupted sutures (Fig-3).

The patient was doing well in his immediate post-operative period and at day-7 the graft host junction was well opposed, sutures in situ, with no evidence of any infiltrate and globe integrity well maintained. topical prednisolone acetate 1% was prescribed six times per day with cycloimmune 0.1% twice daily with oral steroid of 1mg/kg body weight alongwith the medications as advised from a rheumatologist were continued. The patient was a happy being after surgery with BCVA maintained at 6/18p.

## **II. Discussion:**

Cornea melting is a sequelae of progressive keratolytic process. Untreated cases can lead to cornea perforation. Application of corneal patch graft is another way to address this issue.(1) Corneal patch graft use when the cornea defect is too large until the application of cyanoacrylate tissue adhesive is not recommended (perforation of >1 mm) (2) or when there is cyanoacrylate tissue adhesive application failure.(3) This technique will allow the perseverance of globe integrity, stabilize the eye while waiting for the systemic immunosuppressant effect to take place, clearance of necrotic stroma, which is a source of collagenase and shields the bare stroma from the tears neutrophil.(3,4)

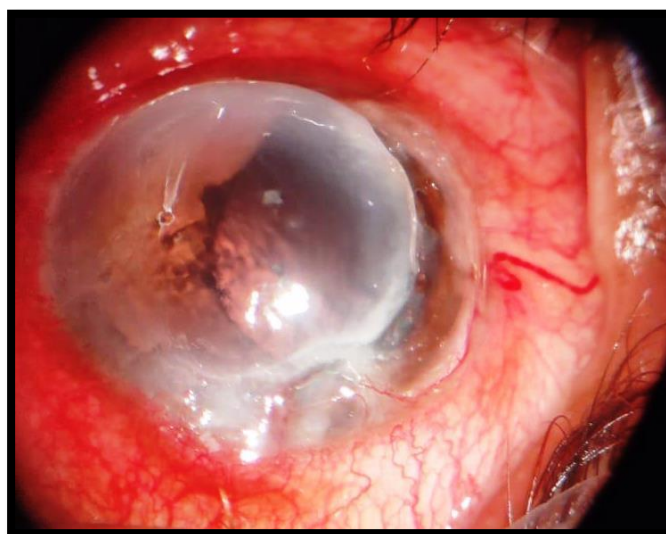
**Learning from the case:** the utmost important learning is to know when not to intervene. As seen in this case, inflammation in the eye was hastened by medical management in its first phase followed by an aggressive surgical management with close liaison with a rheumatologist was a core reason for its success and integrity of the globe.

## **III. Conclusion:**

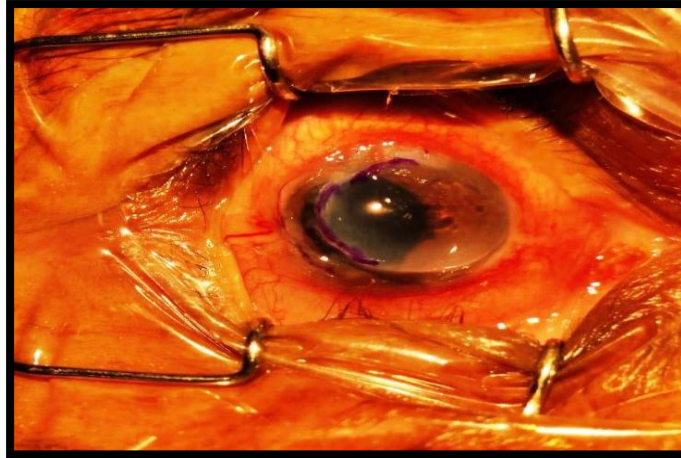
Corneal patch graft has evidence to improve the outcome in treating anterior segment disorders especially involving cornea and sclera. Its advantages have made it possible to produce good post-operative result; be it functionally or cosmetically.

## **References**

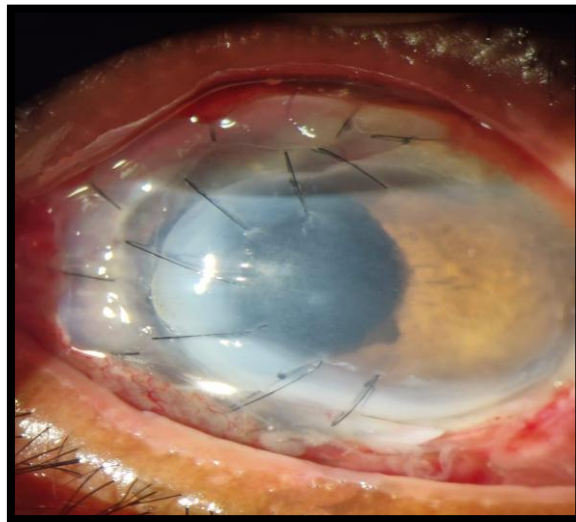
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**Fig:1** shows inflamed eye with 270 degrees corneal thinning



**Fig: 2** shows marking of the crescentic graft for template creation



**Fig:3** shows Banana Graft in situ with 10-0 interrupted Nylon Sutures