

PTERYGIUM REMOVAL SURGERY: WHAT TO EXPECT-CONJUCTIVAL AUTO-GRAFT V/S BARE SCLERA

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Pterygium is a growth onto the cornea, of fibrovascular tissue that is continuous with the conjunctiva. It occurs in the intra palpebral area, much more often nasally than temporally. It can occur nasally or temporarily or both (also double pterygium). Elevated whitish opacities (“islets of Vogt”) and an iron deposition line (“Stocker”) may delineate the head of the pterygium on the cornea. Like pinguecula, it is a degenerative lesion, although it may appear similar to pseudopterygium, which is a conjunctival adhesion to the cornea, secondary to previous trauma or inflammation such as peripheral corneal ulceration. A pseudopterygium often has an atypical position and is not adherent at all points, so a probe can be passed beneath it peripherally.

Like pinguecula, pterygium is associated with exposure to ultraviolet light. The prevalence is higher in tropical areas with more advance grade of presentation. Outdoor work in situations with high light reflectivity, including from sand and water, enhances pterygium development, and the use of hats and sunglasses is protective.

New theories regarding pathogenesis include the possibility of damage to limbal stem cells by ultraviolet light and by activation of

matrix metalloproteinases. The histopathology of pterygium is similar to that of pinguecula except that Bowman’s membrane is destroyed within the corneal component and vascularization is seen.

Pterygia warrant surgical treatment when they encroach or close to the visual axis, induce significant astigmatism, become cosmetically bothersome, cause restrictive strabismus and distortion of the eyelids.

Most methods for small primary pterygia involve simple excision of the pterygium on the cornea and sclera. For larger and recurrent pterygia, the goal of treatment has been prevention of recurrence. The recurrence rates after older techniques have been very high: 50% recur within 4 months of excision and nearly all within 1 year. Beta radiation applied postoperatively to the pterygium base was popular for many years and is moderately effective. It is now used less often because of reports of late scleral necrosis. Currently, the most widely used techniques are conjunctival autografting with or without mitomycin C application. Topical mitomycin C applied at the time of surgery appears to be relatively safe, although scleral and corneal melting may rarely occur. Human amniotic membrane grafts have

also been shown to be effective. Fibrin-based glues for conjunctival autografting have been used to minimize operating time and discomfort associated with sutures.

And now comes the latest twist: a novel approach in which the patient's own blood is used for fixation. Although it hasn't been tested in a randomized, controlled trial, early results suggest that it may end up reshaping the debate altogether.

Sutures vs. Glue

■ **Sutures.**

· On the plus side conjunctival autografts using sutures are the gold standard, the grafts are stable, and the recurrence rate (approximately 15 percent) has been the benchmark, said Dr. Hirst, chief officer of Queensland Eye Institute in South Brisbane, Australia.

· On the minus side, the surgery itself can run 30 to 40 minutes, said Dr. Hirst, and suture-related problems include postoperative discomfort, chronic inflammation and granuloma formation.

■ **Fibrin glue.**

· More recently, the use of fibrin glue for suture-free conjunctival autografts has made significant inroads. "Glue is faster and simpler, and it works most of the time," said Dr. Hirst. Surgical time is roughly half that of the traditional sutured approach, and patients report less postoperative pain and discomfort.

· However, the glue itself is more expensive than sutures.

· And because fibrin glue is a blood-

derived product, it carries the potential risk for transmission of viral and prion diseases, HIV transmission, potential risks of anaphylaxis.

· Fibrin glue is associated with greater concerns about the risk of dehiscence. "There's a certain percentage of failure with glued grafts—not total dehiscence, but instances in which you've got to go in and fix something."

· Recurrence rate appears to be between 10 and 15 percent, Dr. Hirst said. "And no one has effectively assessed the cosmetic results with glue."

OUR STUDY

■ **Purpose :**

Purpose of our study is to analyse and compare the outcome of conjunctival autograft fixation done with polygalactin sutures v/s second method of bare sclera technique.

Materials & methods :

■ It is a prospective , comparative , interventional study

■ In a case series of 60 primary pterygium cases who were operated : 30 cases received conjunctival autografts with suturing and 30 cases with bare sclera technique.

■ Peribulbar anaesthesia was used .

■ Surgery time was recorded .

■ Eye patch was removed after 18 hours.

■ Follow up was done on day 1, 2, 3, 1 week, 1 month, then every 3 months .

■ All surgeries and follow up done by Prof BNR Subudhi, Dr Sandip Sahu & Dr Sarita Panda .

SURGICAL STEPS

■ After doing a reverse stripping for the head of the pterygium , the body was dissected from the overlying conjunctiva down to bare sclera , for 4mm to 4.5mm from limbus .

■ Once the pterygium was excised , the bare area defect size was measured using Castroveijo callipers.

■ A conjunctival autograft of same size from supero-temporal area of same eye was prepared after giving a subconjunctival antibiotic injection.

4. The auto-graft was fixed over the bare sclera after mild cautery with 5 interrupted 10-0 polygalactin sutures .

5. Pad-bandage given for 18 hours .

6. Post-operatively steroid-antibiotic combination and lubricating eye drops were given six times daily , tapering the former one over a period of 4 weeks .

No graft loss in the immediate or late post-operative period was seen . In the small period of follow-up no recurrence was noticed as compared to bare sclera which had 13 recurrences .

DISCUSSION

Conjunctival auto-graft with sutures is superior to bare sclera in respect to better cosmesis, reduction in recurrence rate while bare sclera is scores over auto-graft in respect to faster

surgery , more comfortable patient rehabilitation time , less post operative inflammation . With respect to glue both are less expensive , easily available and auto-graft with sutures at par in recurrence rate .

STUDY LIMITATION

It is a non-randomised study with small study population and a relatively short follow up period .

CONCLUSION

In conclusion, auto-graft with suture is a better option in pterygium surgery in term of recurrence rate , cosmesis , cost effectiveness and easy availability . It demands no extra cost but provides all the benefit of fibrin glue with little drawback . A prospective randomised controlled trial to investigate the long term efficacy of this procedure compared to other newer techniques is required .

REFERENCES

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A. Before excision

B. 1st post op day

C. 3rd post op day

RESULTS

Patient profile and surgery detail

	Auto-graft	Bare-sclera
Mean age (yrs)	40±15	40±15
Male:female	13:17	16:14
Mean surgical time(min)	38±7	10±3
Mean graft size(mm)	10×4±0.5	----

COMPLICATIONS

	Auto-graft	Bare-sclera
Graft loss	Nil	-----
Subconjunctival haemorrhage	30	21
Graft edema	9	-----
Irritation 1 st 4weeks	30	7
Irritation after 4 months (Exposed suture removal done under LA)	13	Nil
Recurrence after 4 months	Nil	13