e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2025; 17(8); 1184-1186

Original Research Article

Autologous Blood vs Suture-Secured Conjunctival Autograft for Primary Pterygium: A Retrospective Comparison from the Upgraded Ophthalmology Department, Darbhanga

Shailja Kumari[1], Ravi Prakash Singh[2], Ram Kumar Satyapal[3], Asif Shahnawaz[4]

[1]Junior Resident, Upgraded Department of ophthalmology, Darbhanga Medical College &Hospital, Darbhanga, Bihar, India

[2]Junior Resident, Upgraded Department of ophthalmology, Darbhanga Medical College & Hospital, Darbhanga, Bihar, India

[3]Associate Professor, Upgraded Department of ophthalmology, Darbhanga Medical College & Hospital, Darbhanga, Bihar, India

[4]Professor & HOD, Upgraded Department of ophthalmology, Darbhanga Medical College & Hospital, Darbhanga, Bihar, India

Received: 21-06-2025 / Revised: 20-07-2025 / Accepted: 21-08-2025

Corresponding Author: Ram Kumar Satyapal

Conflict of interest: Nil

Abstract:

Background: Excision of primary pterygium with conjunctival autograft (CAG) is standard care. Securing the graft with sutures is reliable but may prolong surgery and discomfort. Using autologous blood (AB) as a biologic adhesive is an appealing alternative, though concerns remain about graft stability.

Aim: To compare operative efficiency, early postoperative course, complications, and 12-month recurrence between AB-fixed CAG and suture-fixed CAG.

Methods: Retrospective review of 100 consecutive eyes operated between March 2023 and February 2025. Patients were grouped as AB-CAG (n=50) or Suture-CAG (n=50). Primary endpoints were operative time and recurrence. Secondary endpoints included discomfort indicators, graft-related issues, and patient-reported satisfaction. Group differences were analyzed with t-test or chi-square as appropriate.

Results: Mean operative time was ~22.6 ± 4.1 min in AB-CAG and ~32.3 ± 5.4 min in Suture-CAG ($p<0.001$). Early postoperative discomfort occurred less often with AB-CAG (18% vs 42%, p=0.02). Graft dislodgement was more frequent with AB-CAG (10% vs 2%, p=0.09). Recurrence at 12 months was comparable (8% vs 6%, p=0.64). Satisfaction favored AB-CAG.

Conclusion: Autologous blood fixation shortens surgery and improves early comfort without increasing recurrence, at the expense of a modest rise in graft dislodgement that is usually manageable. Careful case selection and technique optimization are key.

Keywords: Pterygium, conjunctival autograft, autologous blood, sutures, recurrence, ocular surface

Introduction

Pterygium—a fibrovascular conjunctival growth advancing onto the cornea—can blur vision, induce astigmatism, and recur after removal. Placing a conjunctival autograft over the excision site reduces recurrence compared with bare sclera techniques. Conventionally, surgeons secure the graft with 10-0 nylon or similar sutures; while dependable, sutures add time and can provoke inflammation and foreign-body sensation. Autologous blood coagulum offers a no-cost adhesive that may accelerate surgery and recovery. This study evaluates real-world outcomes of these two fixation strategies in our center.

Objectives

1. Compare operative duration between AB-CAG and Suture-CAG.
2. Assess early postoperative symptoms and graft-related complications.
3. Compare 12-month recurrence between techniques.
4. Explore overall patient satisfaction.

Design & Setting: Retrospective, comparative cohort conducted in the Upgraded Department of Ophthalmology, Darbhanga, over 24 months (Mar 2023–Feb 2025).

Cohort (Eligibility)

Inclusion: Primary nasal pterygium undergoing CAG.

Exclusion: Recurrent/double-headed pterygium, significant ocular surface disease, coagulopathy, or incomplete follow-up documentation.

Sample: 100 patients—50 AB-CAG and 50 Suture-CAG—with comparable baseline features (age, sex distribution).

Endpoints

- **Primary:** Operative time; recurrence (fibrovascular regrowth ≥1 mm onto cornea within 12 months).
- **Secondary:** Early discomfort (pain/redness/foreign-body sensation), graft edema, graft displacement, and patient-reported satisfaction.

Methods (Data & Analysis)

Data were abstracted from operative notes and follow-up records. AB-CAG involved allowing a thin layer of patient's blood to secure the graft; Suture-CAG used 10-0 nylon. Discomfort was captured via charted VAS/clinical descriptors in week-1 to month-1 visits. Continuous variables were analyzed with Student's t-test; categorical with chi-square; $p<0.05$ signified statistical significance (SPSS v25).

Results

Baseline: Mean age 44.6 ± 10.2 y (AB-CAG) vs 45.8 ± 9.6 y (Suture-CAG); males ~58% overall; no material baseline imbalances.

Table 1. Operative and Postoperative Outcomes

Outcome	AB-CAG (n=50)	Suture-CAG (n=50)	p-value
Operative time (min)	22.6 ± 4.1	32.3 ± 5.4	<0.001
Early discomfort	9 (18%)	21 (42%)	0.02
Graft edema	6 (12%)	5 (10%)	0.76
Graft dislodgement	5 (10%)	1 (2%)	0.09
Recurrence at 12 mo	4 (8%)	3 (6%)	0.64
High satisfaction	44 (88%)	38 (76%)	0.15

Key findings: AB-CAG markedly reduced operative time and early discomfort. Recurrence remained similar across groups. A small uptick in graft displacement with AB-CAG was observed but typically resolved with conservative measures or resuturing.

Discussion

Our experience indicates that using autologous blood to anchor the conjunctival graft can streamline surgery and improve patient comfort in the early postoperative period. The technique's main trade-off is a greater likelihood of early graft mobility, which underscores the importance of meticulous bed preparation, adequate hemostasis (not excessive), and gentle postoperative handling instructions. Crucially, 12-month recurrence did not differ, suggesting that long-term control is preserved when the graft ultimately adheres well.

These results align with the broader literature describing shorter operative times and improved comfort with tissue adhesives versus sutures, while recurrence hinges more on graft sizing, orientation, bare sclera coverage, and postoperative inflammation control than on the fixation method alone.

Limitations include retrospective design, single-center data, and reliance on charted symptom scales. A prospective randomized trial could validate these findings and identify technical refinements that reduce early displacement in AB-CAG.

Conclusion

At our center, AB-CAG offered faster surgery and better early comfort than suture-secured CAG, without a rise in recurrence at 12 months. With proper technique and follow-up, AB-CAG is a practical, low-cost option—especially valuable in resource-constrained settings.

References

1. Uy HS, Reyes JM, Flores JD, Lim-Bon-Siong R. Fibrin glue vs sutures for CAG after pterygium excision. Ophthalmology. 2005; 112:667–671.
2. Koranyi G, Seregard S, Kopp ED. Conjunctival autograft fixation: fibrin adhesive compared with suturing. Acta Ophthalmol Scand. 2005; 83:209–213.
3. Katikireddy KR, et al. Outcomes with autologous blood vs sutures in pterygium CAG. Indian J Ophthalmol. 2019; 67:233–238.
4. Ratnalingam V, et al. Autologous blood and fibrin glue in CAG fixation: comparative data. Cornea. 2010; 29:561–565.
5. Kurna SA, et al. Technique choice and pterygium recurrence. Curr Eye Res. 2013; 38:463–469.
6. Ma DH, See LC, Liau SB, Tsai RJ. Amniotic membrane vs CAG vs bare sclera. Br J Ophthalmol. 2000; 84:973–978.

7. Sharma A, et al. Clinical comparison of autologous blood and sutures for CAG. J Clin Diagn Res. 2017;11:NC06–NC09.
8. Clearfield E, Hawkins BS, Kuo IC. CAG vs amniotic membrane—systematic review. Cochrane Database Syst Rev. 2016;2:CD011349.