

## **Tisseel versus Evicel versus Vicryl sutures for conjunctival autograft fixation in pterygium surgery: Safety and efficacy**

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**Purpose:** To compare between Evicel, Tisseel (fibrin glues) and 10/0 Vicryl sutures in conjunctival autograft during pterygium surgery.

**Methods:** Prospective, randomized study. 85 patients were randomized to have pterygium surgery with conjunctival autograft using either vicryl 10-0 (25 patients) or Evicel (29 patients) or Tisseel (31 patients). The following data was collected: the location of the pterygium, visual acuity before the procedure, flap time (in minutes), patients discomfort one day post operation, automatic refraction before the procedure and 3 month after the surgery, complications and recurrence rates. All surgeries were performed by a single surgeon (GBS).

**Results:** The flap time was significantly shorter in the fibrin glue groups compared to the vicryl group: 5.66 minutes for Evicel glue, 3.74 minutes in Tisseel glue and 23.22 minutes in the suture group (ANOVA,  $P < 0.0001$ ). The patients discomfort at day one post operation was significantly lower in the fibrin glue groups (ANOVA,  $P = 0.047$ ). The recurrence rate was 17.24% in the Evicel group (5 patients), 0% (no patient) in the Tisseel group and 4.17% (one patient) in the suture group (chi square,  $P = 0.027$ ). There were no significant changes in visual acuity improvement between group (Matched pairs,  $P = 0.703$ ). There were significant reductions in vector analysis of surgically induced astigmatic change in Tisseel and suturing groups (Matched pairs,  $P = 0.037$ ,  $P = 0.003$ ). However, there were no differences in the change between groups (Matched pairs,  $P = 0.343$ ).

**Conclusion:** Our study results suggest that fixation of the conjunctival flap with fibrin glue reduces the operation time and the discomfort after the surgery with lower recurrences in the Tisseel and suture groups. Visual acuity and surgically induced astigmatic change were not different between groups. In conclusion, in our study, we found that Tisseel give the most safe and efficient results in pterygium surgeries.