Purpose: To compare the efficacy and safety of frozen preserved and dehydrated amniotic membrane allografts using either fibrin glue or sutures for attachment in patients undergoing primary pterygium excision.

Methods: A prospective randomized study of 30 eyes of 30 patients undergoing excision of primary pterygium was performed. After pterygium excision, the bare sclera was covered with a frozen preserved amniotic membrane graft in 15 eyes (Group 1) and with a dehydrated amniotic membrane graft in 15 eyes (Group 2). The study groups were further randomized into subgroups, based upon the technique used to secure the graft: fibrin glue (subgroup 1A, n=8, and subgroup 2A, n=8) and 10-0 nylon sutures (subgroup 1B, n=7, and subgroup 2B, n=7). The patients were followed for approximately one year. The main outcome measures were graft success, recurrence of pterygium, operating time, postoperative complications, and patient comfort.

Results: The mean follow-up period was 24 months. The recurrence rate for Group 1 (33.3%) compared with Group 2 (13.3%) was not significantly different (p = 0.19). The average operating time for grafts attached with fibrin glue was significantly shorter than for grafts attached with sutures (p < 0.001). Post-operative symptoms of foreign body sensation were more frequently observed in individuals who had grafts fixated with sutures compared with individuals with grafts fixated with fibrin glue (p < 0.001). No post-operative complications were seen in Group 1. One individual in Group 2 developed a conjunctival granuloma post-operatively.

Conclusions: Both frozen preserved and dehydrated amniotic membrane transplantation can be safe and effective adjunctive treatments for primary pterygium. Fibrin glue appears to be a safe and effective alternative to attach amniotic membrane grafts after pterygium excision. The fibrin glue technique may result in shorter operating times and less discomfort post-operatively in comparison with attachment of the graft using sutures.