

## Results of 50 Cases with a New Procedure Graft By Rotated Conjunctival Flap with One U Suture

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### **Abstract**

*1 Objectives: To evaluate the one-year follow-up results of 50 patients' 50 eyes with either nasal or temporal pterygium, recurrent pterygium surgery was performed by a new technique.*

*2 Methods: Clinical trial on consecutively selected patients, non -randomized, self -control: before and after the intervention.*

*3 Diagnosis, the procedure for intervention, principal measurements*

□ *Diagnosis Pterygium was graded as follow: Grade I: crossing the limbus; Grade II: mid-way between limbus and pupil; Grade III: reaching up to pupillary margin and Grade IV: crossing pupillary margin*

□ *New procedure*

*1. Pterygium and conjunctiva anaesthesia with 2% lidocaine .*

*2. The body of the pterygium is dissected 4 mm from the limbus, down to the bare sclera and pterygium is resected by avulsion. If the portion of conjunctiva pterygium is thickened, it should be cut off and haemorrhages will be managed by direct compression with a soaked lignocaine cotton applicator.*

*3. A rectangular sized graft by 4 x14mm is prepared*

*4. The conjunctiva flap is taken from the superior 12 o'clock position. This flap is resected with scissors, but the head flap 2mm width is fixed on conjunctiva in grafting.*

*5. This flap is rotated anti-clockwise in case of nasal pterygium or clockwise in the case of temporal pterygium. (for left eye)*

*6. The head of the flap is still on the conjunctiva: one side of the limbal flap inserted limbal cornea to maintain the limbus-limbus orientation and the other side is contacted with the conjunctiva.*

*7. The end of the flap 4mm width is sutured with one U through under the conjunctiva 8.0 silk.*

*8. Applying gentle pressure by a brief tamponade with a soaked lidocaine cotton applicator on the conjunctiva graft-wound for 3 minutes before the eye was bandaged for 24 hours.*

*9. For one week later, topical antibiotic-steroid eye drops along with topical lubricants were given.*

*10. This one suture will be removed 1 week later.*

□ *Principal measurements: mm of flap and recurrence post-surgery follow-up: three months, six months, and one-year follow-up*

*4 Results: Patients characteristics: Before surgery: Means age of 50 patients Average age= 45.7± 10.15. Ratio Male/Female=29/21=1,38. Recurrence age= 38,8 is lower than average age. Grade 3= 68% vs. Grade 4 = 32%. Nasal side 80% vs. temporal side 20%. Recurrence rate 20%*

*Three months after surgery: There are 5 cases of the irritated eye (10%) when contacted with wind and air. They are men workers in wind and dust environment.*

*Six months after surgery: No case with a displacement of graft. Two cases are little red eyes (4%).*

*One year after surgery: Recurrence 1 case (2%)-Pterygium growth is 2mm from the limbal cornea. He was 33 y.o. male patient, nasal side, belonged to the recurrence group in preoperation. He had the second recurrence after a 1-year follow-up.*

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*5 Conclusions: This new procedure graft by rotated conjunctival flap with one U suture for surgical pterygium on 50 patients' 50 eyes with either nasal pterygium or temporal pterygium and recurrent pterygium surgery after one-year follow-up has satisfying results. This new technique significantly shortens the duration of surgery, lost graft or displaced graft will be avoided. It is low cost, safe and effective in reducing early postoperative complications and patients' discomfort. Patients with all pterygium can be applied especially in the tropical area of developing countries where the prevalence of pterygium is relatively high.*

**Keywords:** pterygium surgery, nasal pterygium, temporal pterygium, graft with auto conjunctival flap.

## **1. Introduction:**

Pterygium is a degenerative ocular surface disorder with fibrovascular dysplasia growth of the subconjunctival tissue onto the cornea that can be caused corneal opacity [1]. Pterygium is quite common in tropical and subtropical countries, which are hot and dry sunny. In Vietnam, it is also a common eye disease. According to statistics of the Hanoi Institute of Ophthalmology, the percentage of pterygium accounted for 5.24% of the total population (1996). The pterygium is common in the nasal side and rarely on the temporal side. The disease can progress slowly for years, or it can progress very quickly, invasively. Pterygium was graded depending on the extent of corneal involvement: Grade I= crossing the limbus, Grade II – mid-way between limbus and pupil, Grade-III= reaching up to pupillary margin, and Grade IV= crossing pupillary margin. Pterygium causes red-eye, slight irritation, cosmetic blemish, and gets advanced; it can cause impairment of vision. Surgical techniques have been described as methods for the management of pterygium, including bare sclera resection. After cutting off pterygium, the mitomycin C application was followed. [2]. Recurrent pterygium surgery often occurs. So pterygium excision plus conjunctival autografting or amniotic membrane placement are often used [3][4]. The most popular surgical procedure is limbal conjunctival autograft with suture, sutureless or glue [5][6]. It has its own drawbacks like cost, increased operating time, postoperative discomfort, inflammation, necrosis, giant papillary conjunctivitis, scarring and granuloma formation [7][8].

A new procedure graft by rotated conjunctival flap with one U suture is applied on 50 patients' 50 eyes [9]. Some results of these patients are reported hereinafter a one-year follow-up.

## **2. Methods:**

**Design:** Clinical trial on consecutive 50 adult patients. **Self-control:** Pre-surgery and post-surgery.

**Patients:**

**Inclusion:** All patients with either nasal pterygium or temporal pterygium signed an agreement for his or her surgery after ophthalmologist' diagnosis and advice.

**Exclusion:**

**For diagnosis:**

Pterygium was graded depending on the extent of corneal involvement: Grade I – crossing the limbus, Grade II – mid-way between limbus and pupil, Grade III – reaching up to pupillary margin, and Grade IV – crossing pupillary margin

**For surgical technique:**

1. Pterygium and conjunctiva anaesthesia with 2% lignocaine .
2. The body of the pterygium is dissected 4 mm from the limbus, down to the bare sclera and pterygium is resected by avulsion. If the portion of conjunctiva pterygium is thickened, it should be cut off and hemorrhages will be managed with direct compression tamponade.
3. A rectangular sized graft by 4 x14mm is prepared
4. The conjunctiva flap is taken from the superior 12 o'clock position. This flap is resected with scissors, but the head flap 2mm is fixed on conjunctiva in the graft.
5. This flap is rotated anti-clockwise in case of nasal pterygium or clockwise in the case of temporal pterygium.
6. The head of the flap is still on the conjunctiva: one side of the limbal flap inserted limbal cornea to maintain the limbus-limbus orientation and the other side is contacted with the conjunctiva.

7. The end of flap 4mm is sutured with one U through under the conjunctiva 8.0 silk.
8. Applying gentle pressure with a wet tampon for 3 minutes before the eye was bandaged for 24 hours.
9. For one week later, topical antibiotic-steroid eye drops along with topical lubricants were given.
10. This one suture will be removed 1 week later.

**3. Results & Discussion:**

Before surgery: Means age of 50 patients, Average age= 45.7± 10.15. Ratio Male/Female=29/21=1,38. Recurrence age= 38,8 is lower than average age. Grade 3= 68% vs. Grade 4 = 32%. Nasal side 80 vs. Temporal side 20%. Recurrence rate 20%

**Table1 : Distribution of patients in preoperation**

	Male	Female	Grade 3	Grade 4	Nasal side	Temporalside	Recurrence	
							Grade 3	Grade 4
Number	29	21	34	16	40	10	4	6
%	58	42	68	32	80	20	20	

After surgery: Three-month post-operation: There are 5 cases of the irritated eye with the contacted wind. They are men labor in wind and dust environment.

Six months after surgery: No case with a displacement of graft. Two cases are little red eyes.

One year after surgery: Recurrence 1 case-Pterygium growth is 2mm from the limbal cornea. He was 33 y.o. male patient, nasal side, belonged to the recurrence group in preoperation. He had the second recurrence after a 1-year follow-up. The percentage of recurrence is 2% in this study.

There are many procedures to remove pterygium with different recurrence rates.

Compared to other studies: the rate of recurrence between sutured graft (4.7%) and nonsutured graft (6.8%) is definitely significant [7]. Malik et al. reported recurrence in 1 eye (2.5%) at 6 months in the case of sutureless and glue-free autograft. As per Hall et al., there were 2 recurrences in the suture group at the end

Foroutan et al., observed a recurrence rate of 13.33% in three years follow up with autologous fibrin. Wit et al. reported no recurrence in 15 eyes within a mean follow up period of 9.2 months.[8]. In 1985, Kynion used a method of autologous transplantation with a recurrence rate of 5.3%; Lucio Burato removed pterygium and Mitomycin application with a recurrence rate of 1.5-6%. In 1999 Donald T- H Tan auto conjunctiva graft, the recurrence rate was 2% [9].

**Table 2: Compared recurrence rate to other studies**

Authors	Duong Dieu	Kynion	Malik et al.,	Lucio Burato	Donald T- H Tan
Recurrence percentage%	2%	5,3%	2,5%	1.5-6%	2%
Months follow-up	12 months	6 months	6 months	6 months	12 months

Causes of pterygium: Some risk factors are: Lots of exposure to ultraviolet light (like from the sun); Dry eyes; Irritants like dust and wind. People who live near the equator tropical area and a man between 20 and 40 are most affected. But it can affect anyone who lives in a sunny place or lots of time in the sun without eye protection such as sunglasses. It can stop the production of fluid on the outside of your eye, so it might feel dry or like you have something stuck in it. It may become red.

Prevention of pterygium: Wear sunglasses every day. This includes overcast days - clouds don't stop ultraviolet light. Choose shades that block 99%-100% of both ultraviolet A (UVA) and ultraviolet B (UVB) radiation. Wraparound styles provide the best shield against ultraviolet light, dust, and wind. Experts say to choose a hat with a brim to protect your eyes from UV light. And use artificial tears to keep the eyes moist in dry climates.

#### 4. Conclusion:

This new procedure graft by rotated conjunctival flap with one U suture for surgical pterygium on 50 patients' 50 eyes with either nasal pterygium or temporal pterygium and recurrent pterygium surgery after one-year follow-up has satisfying results. This new technique significantly shortens the duration of surgery, lost graft or displaced graft will be avoided. It is low cost, safe and effective in reducing early postoperative complications and patients' discomfort. Patients with all pterygium can be applied especially in the tropical area of developing countries where the prevalence of pterygium is relatively high. When you submit your paper, print it in a two-column format, including figures and tables. In addition, designate one author as the "corresponding author." This is the author to whom proofs of the paper will be sent. Proofs are sent to the corresponding author only.

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