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### RESEARCH ARTICLE

#### INFERIOR LIMBAL CONJUNCTIVAL AUTOGRAFTING IN PRIMARY PTERYGIUM.

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#### Abstract

**Aim:** The aim of the study was to evaluate the outcome of pterygium surgical management with inferior temporal conjunctivo-limbal auto graft for the treatment of primary pterygium.

**Method :** This prospective study included 9 eyes of 9 patients with primary pterygium treated by means of pterygium excision with conjunctivo-limbal auto graft from the lower bulbar conjunctiva in Al Haram private Hospital in Benghazi, Libya . Patients were examined on the first day, the first week and the second week and after 3 months. Outcomes were evaluated in terms of complications and recurrence.

**Results:** During the 3 months of follow-up, few postoperative complications occurred and recurrence occurred in only one (11.1%) eye during the follow-up period.

**Conclusion:** inferior bulbar conjunctivo-limbal auto graft or the management of primary pterygium has a low recurrence rate, leaving the superior conjunctiva available for glaucoma surgery if needed further.

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#### Introduction:-

Pterygium, a Latin term derived from the Greek word meaning “small wing” ,pterygium is one of the most obvious ophthalmohelioses (sun-related eye diseases) [1] [2]which was proven to be an ophthalmic enigma[3]It is potentially the Cinderella ocular disease—considered a diminutive condition and previously described as a degenerative condition.

Pterygia are wing-shaped ocular surface lesions extending from the bulbar conjunctiva onto the cornea which occurs predominantly on the nasal limbus, although temporal pterygia rarely occur in isolation[4]. Those who described its medical and surgical management, including Hippocrates, Celsus, Pallus, Sushruta, and Aetius, among others, discussed the innate difficulties, with an abundance of complications and its tendency to recur [5]. Medical local management is a symptom relief mainly, the mainstay of management is surgical excision but prevention of recurrence is the main challenge, which has been estimated to be as high as 30-70% in simple excision [6]. Auto graft transplantation following pterygium excision presents the advantage of adding the function of the limbus ,which improves corneal healing [7].

Standard separate limbal-conjunctival autograft transplantation using the inferior conjunctiva not the usual superior as a source was modified .Leaving the superior conjunctiva free for any glaucoma filtration surgery if further needed.

#### **Patients and methods:-**

This prospective analysis study was conducted between November 2015 and May 2016 , in Al Haram private Hospital, Benghazi ,Libya .Nine eyes of 9 patients were evaluated and dignosed as primary pterygium(cases of pterygium with recurrence ,or other ocular surafce disease or trauma were excluded ).An informative written consent was signed by the patients after describing the procedure and it's complication . The surgical indications were either cosmetic , symptomatic or vision threatening ,and all surgeries were done by one surgeon( \*).

Pterygium was graded : grade I, between the limbus and a point midway between the limbus and the pupillary margin; grade II, the head of the pterygium present between a point midway between the limbus and the pupillary margin (figure: 1) and grade III, crossing the pupillary margin [8].



**Figure 1:-** Grade 2 pterygium 1

All surgeries were performed under local anesthesia (figure 2). The body of the pterygium was outlined and excised deep to the sclera, and all of the underlying tenon's capsule was removed ,the body was reflected towards the cornea and the head was dissected using a blade in a direction towards the center of the cornea. Subconjunctival fibrous tissue under pterygium was excised wider than the pterygium size. The conjunctival defect was measured with calipers and was well marked. The graft dissected from the underlying tenon by subconjunctival lidocaine injection, then complete dissection done (figure3). The graft was sutured to the edges of bulbar conjunctiva with interrupted nylon ensuring that the limbal edges corresponded (figure 4). Sutures removed at the third week postoperatively, topical corticosteroids and antibiotics were administered for 3-4 weeks and tear substitutes for 6 weeks.



**Figure 2:-** sub conjunctival anesthesia



**Figure 3:** Inferior limbal graft dissection

Patients were evaluated on the first day, first week, at 2 weeks, first month and at 3 month postoperatively. Evaluation of complications after pterygium excision. Recurrence was determined to be fibrovascular tissue invasion of the cornea more than 1 mm in diameter beginning from the limbus at the operation site <sup>[14]</sup>.

### Results:-

There were 7(77.78%) male and 2 (22.23%) female patients. with mean age of 45 years.

- Grade1 pterygium : 1 (11.11%) eyes
- Grade2 pterygium : 8 (88.89%) eyes
- Grade3 pterygium : no cases

The indications of surgery were symptomatic relief in 6(66.67%)cases ,vision affection pterygium1 (11.11%)cases and cosmetic 2 (22.22%) .During follow up period post-operative self limiting complications occurred in the first two weeks in 5 different (55.56 %) cases as photophobia ,blepharospasm ,foreign body sensation, sub Conjunctival hemorrhage, post-operative graft edema, some patients showed more than one complication recurrence occurred in one eye in the third month , the main trouble was the poor post operative follow up.

### Discussion:-

Conjunctival auto graft from the inferior bulbar conjunctiva leaves the superior bulbar conjunctiva intact for further glaucoma filtering surgery if needed in the future and combining the peripheral part of the limbus which rich in stem cells may add the success of the procedure and decrease the recurrence rate ,unfortunately our study enrolled a small sample of only 9 patients with compared to [9,10].The surgical indication was going with the findings of *Nazzulah et al* [18] and *Shrestha et al*[11] which was symptomatic relief indication .most of the patients were females this was also noticed in [12] but not in [13] which the male predominance can be explained by work related sun and heat exposure . Other studies has added the use of Mitomycin C for a better low risk of recurrence [10] and others have a superior use of fibrin glue [10,16] instead of the interrupted sutures ,but the results and recurrence rate was nearly the same with their use or not .

The most important finding in this study was the low risk of recurrence as in [14,15,10] and the good results that saved the superior conjunctiva, but our sample size is small and the patients compliance were poor beside the poor post operative precise follow up.

Many studies [12,16] have compared the superior to the inferior graft and found no difference in the outcome and the postoperative complications.

As the main goal of pterygium surgery is prevention of recurrence and symptoms relief and cosmetically acceptable results[17] this was got beside adding the limbal tissue which adds stem cells for a better healing[18,10] .

**Conclusion:-**

The low recurrence rate of the inferior limbal conjunctival auto graft and the few self limiting complications makes this procedure of choice in primary pterygium, especially in glaucoma patients in whom the superior bulbar conjunctiva is valuable.

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