Conjunctival rotational flap versus autograf t techniques in pterygium surgery at AL-Hussain teaching hospital from 2009-2015

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Abstract:

Purpose :the aim is to compare the results of conjunctival flap and autograft in term of recurrence rate and complications in primary pterygium surgery

Methods:

Atotal of 70 patients (thirty male and forty female) operated for primary pterygium with conjunctival autografts(in 36 eyes)or conjunctival flap (in 34 eyes) technique at AL-Hussain teaching hospital-Kerbala ,with 18 months follow up.Patients were asked for voluntary examinations of their respective ocular surface status

Results:

Mean age was 43.5 years(range 21-70)42.65% of the patients were male,70% of them worked predominantly out doors.Mean follow up was 12months (3-18)

Recurrence rate recorded was 8.3% graft,8.8% flap,however oedema was more in graft,granuloma was nil in both

Conclusions:

After this long follow up period for for conjunctival flap and autograft surgeries,there was no statistically significant differences in term of the recurrence rate,as well as autograft is alonger technique with more postoperative oedema

Introduction:

In Greek apterygium means wing,it is afibrovascular wing like degenerative condition extending from the conjunctiva toward the cornea

Pterygium makes concern for both the surgeon because of high recurrence rate and the patient because of its unsightly appearance,those who live in at areas proximal to the equator have high prevalence rate of pterygium occurrence,usually its prevalence is 5.2% world wide but in warm climates it raises up to 22%

No one found adefinitive causative factor for pterygium but it occures more in ultraviolet sun exposure,with high incidence in male as they may expend more hours out doors,more common in

farmers and those who donot wear sunglasses,the incidence rate and prevalence differ with respect to age,the elderly have ahigher prevalence and it is rare in hose bellow 20 years

The most common symptoms associated withpterygium include the cosmetacally noticeable blemish,episodes of pterygium inflammation during which it becomes hypereamic with photophobia,foreign body sensation,watering,some patients complain from decreased visual acuity due to astigmatism,decreased contrast sensitivity and glare1,7,12

during pterygium surgery we try to remove the abnormal tissue from the cornea and sclera,

the ophthalmic surgeon must explainto the patiet beforedoing the surgry the high percentage of its recurrence,13,15

Bare sclera technique was done previously but it was associated with high recurrence rate11,,nowadays we fill the gap with conjunctival autograft taken from the area under the upper eyelid ,suture it ,but it is associated with oedema and inflammation that may last for weeks,some surgeons use glue that has rapid healing,2

Others use amniotic membrane instead of the autograft in case a large defect occures because of conjunctival dissection this had been noticed to be with less post operative inflammation and speed up the reepithelisation of the surface15,,while with counjunctival rotational flap we preserve the inferior limbal anchoring point 1mm using an incomplete cutting of the limbal area,4

Aim:comparing between conjunctival flap and autograft in term of recurrence rate and complications regarding post operative oedema ,inflammation and granuloma formation

Materials and Methods:

70 patients who underwent pterygium surgery ,performed on one eye of 35 male and 45 female,flap in 36 eyes and autograft in 34 eyes,the surgeries were done at AL-Hussain teaching hospital by the same surgeon

Data obtained preoperatively and at the first,fifth,10th and 15th day, and at the first,third,sixth,12th and 18th postoperative month,standerised protocol including age,sex,previous ocular surgeries, working environment,location of pterygium, surgical technique,and outcomes

Surgeries done under topical anaesthesia using proparacain drops,the pterygium head resected first from its central corneal edge toward the limbal one using a 15 edge dispossable knife aiming to liberate the healthy,tractioned nasal bulbar conjunctiva so as finally we remove as little of it as possible,then we resect the body of the pterygium and its accompannying Tenon capsule,any remaining episcleral tissue and the expossed Tenon capsule under the free edges of the free bulbar conjunctiva were also removed.

Afree conjunctival graft was taken from the same eye as follows:

Two radial incisions made on the superior bulbar conjunctiva using 15 -degree dispossable knife encompassing an area similar to that of the conjunctival defect done during resecting the pterygium down to the limbal area but with ouy including it.

Wescott scissors and toothed Colibri foreceps used to remove the underlying Tenon capsule.The graft was resescted at about 1mm from the limbus and put over the recepiant bed,anchored with 3 interrupted conjunctival(graft)-episcleral-conjunctival 10-0 nylon sutures, 2mm from the corneal border ,and 4 interrupted conjunctival(graft)-conjunctival sutures at its free borders, then the upper bulbar conjunctiva was anchored to the limbus using three 10-0 nylon in order to preserve ahealthy non scarred donor site for future surgeries.

Tobramycin drops and ointment were applied at the end of the surgery,eye occluded for 24 hours, then on the next day aweak steroid drops like flourometholone advised 4 times daily +artificial eye drops(preservative free)for 10 days,tapering the steroid drops but keeping on artificial eye drops,sutures removal between 10th and 15th postoperative days.

Results:

The chart s of the 70 patients were reviewed

15 of the patients had ahistory of fellow eye pterygium surgery, five of them recurrent.Mean age was 44.6 years (range,21-70), 42.8% were male,and 57.1% were female

70% of them worked out doors.Mean follow up was 12 months (range 3-18 months)

Table (1) demographic data of the study:

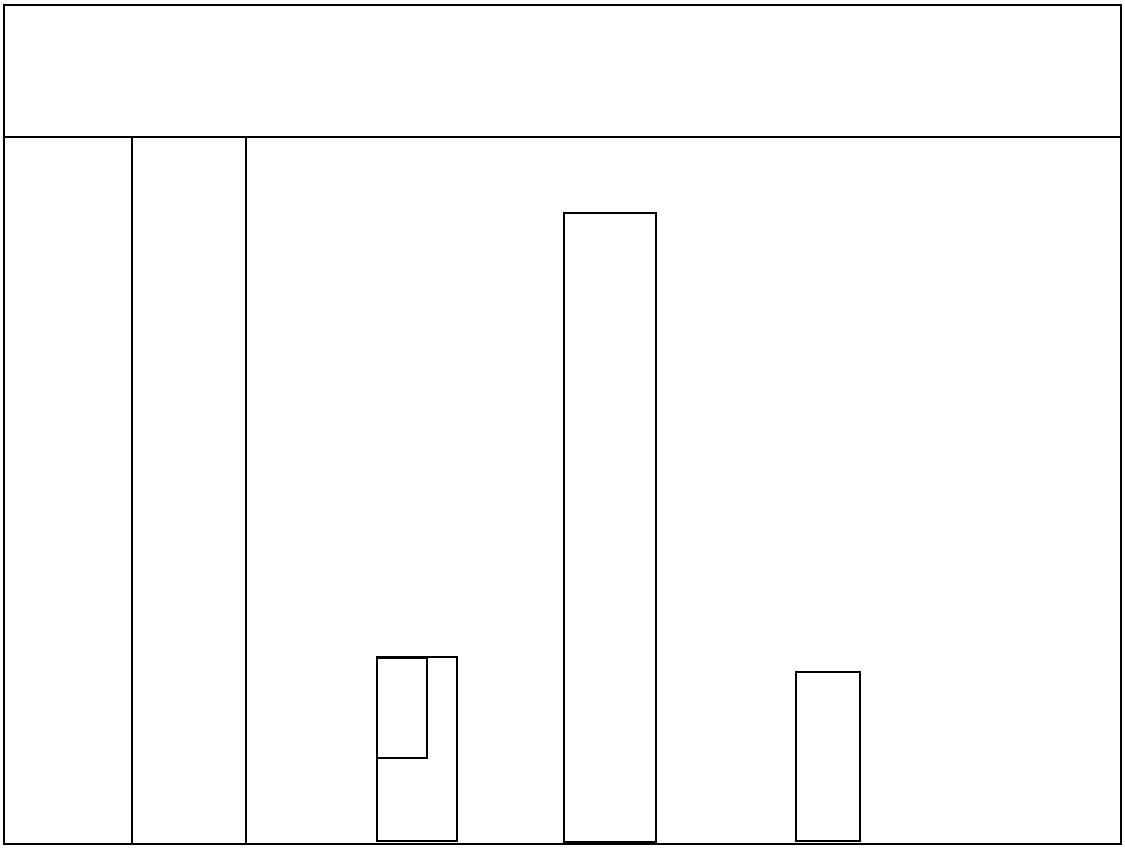
variable	number	Percent
Sex		
Male	30	42.8
female	40	57.2
Recurrent pterygium	6	8.5
Pterygium type		
Grade 1	30	42.8
Grade 2	40	57.2
Mean age	43.5	

Table (2) number of patients in the two processes and the recurrence rate

Type of surgery	Number of patients	Number of recurrent cases

Conjunctival rotational flap	34	3
Conjunctival autograft	36	3

Figure(1) showing the number of treated cases in the two techniques and the recurrence rate.



There was atotal of 70 surgeries: 34 using conjunctival autograft technique and 36 using conjunctival flap technique

one case had conjunctival tear during surgery and 2 cases have had graft buttionhole

Early post operative discomfort noticed in both groups,also subconjunctival heamorrhage was seen too

Oedema had occurred in 20 patients from the autograft technique and only in 6 patients with the flap technique

granuloma not seen in any of the two techniques

The late complications were limited to recurrence of pterygium(6 cases,8.57%) three of them underwent conjunctival autograft and 3 those with conjunctival flap technique,four of the recurrent cases seen after 6 months , while the other two after 12 months.None of the patient had any previous ocular surgery

Discussion:

Many attempts had been done in order to optimize pterygium surgery.Nowadays awide variety of techniques are used from the bare sclera technique to the amniotic membrane transplant

The bare sclera technique take ashort time ,but it is associated with high recurrence rate,some surgeons use mitomycin or 5FU in order to decrease the recurrence rate but these chemicals have some serious complications like melting and necrosis of sclera

Mitomycin related to aclass of drugs nominated as radiomimetic as their mode of action mimics the act of the ionizing radiation,they have complications similar to those seen after beta radiation,therefore we must compare between decreasing the rate of pterygium recurrence and the suspected complications of mitomycin and 5FU in pterygium surgery,also no one knows if their action is restricted to fibroblasts,as they could affect other cell lines like the limbal stem cells,which are responsible for the second aim of this surgical procedure, which is the restoration of the functional limbal barrier,in adisease which already expressing agradual loss of these limbal cells due to the additive effects of the ultraviolet radiation, microtrauma, and apoor generation and amplification of the transitory amplified cells

Recently the autograft technique maybe considered the procedure of choice for removing pterygium as it is associated with very low rate of recurrence (3-5) and also with out the risk of necrosis and melting of sclera noticed with the use of chemotherapy but with the cost of time and discomfort associated with this technique

Though the patients included in this study were essentially consecutive cases ,but the retrospective nature of this study may induce unrecognized bias

It was noticed in prospective series in the literature report recurrence rate 2-39% in sutured graft while in our study it was 8.3% which is considered within the accepted rate of recurrence by most studies

Also adifference in sex distribution between groups,yet we are not aware of any results for male and female recurrences.

All pterygium surgeries were done by the same surgeon so we believe that no late recurrences were missed

We found in this study that the recurrence rate with the flap technique was 8.8% which was comparable with astudy done Narsani ak et al 19%, young et al 15%,manning et al 10.5%

Autograft group recurrence rate in our study was 8.3% compared to Keizer et al 6.6%,Kenyon et al 5.3%

Conclusion:

The technique of conjunctival rotational flap in primary pterygium surgery was with nearly similar rate of recurrence and easier ,faster ,with less oedema and more comfortable in compare to the conjunctival auto graft technique

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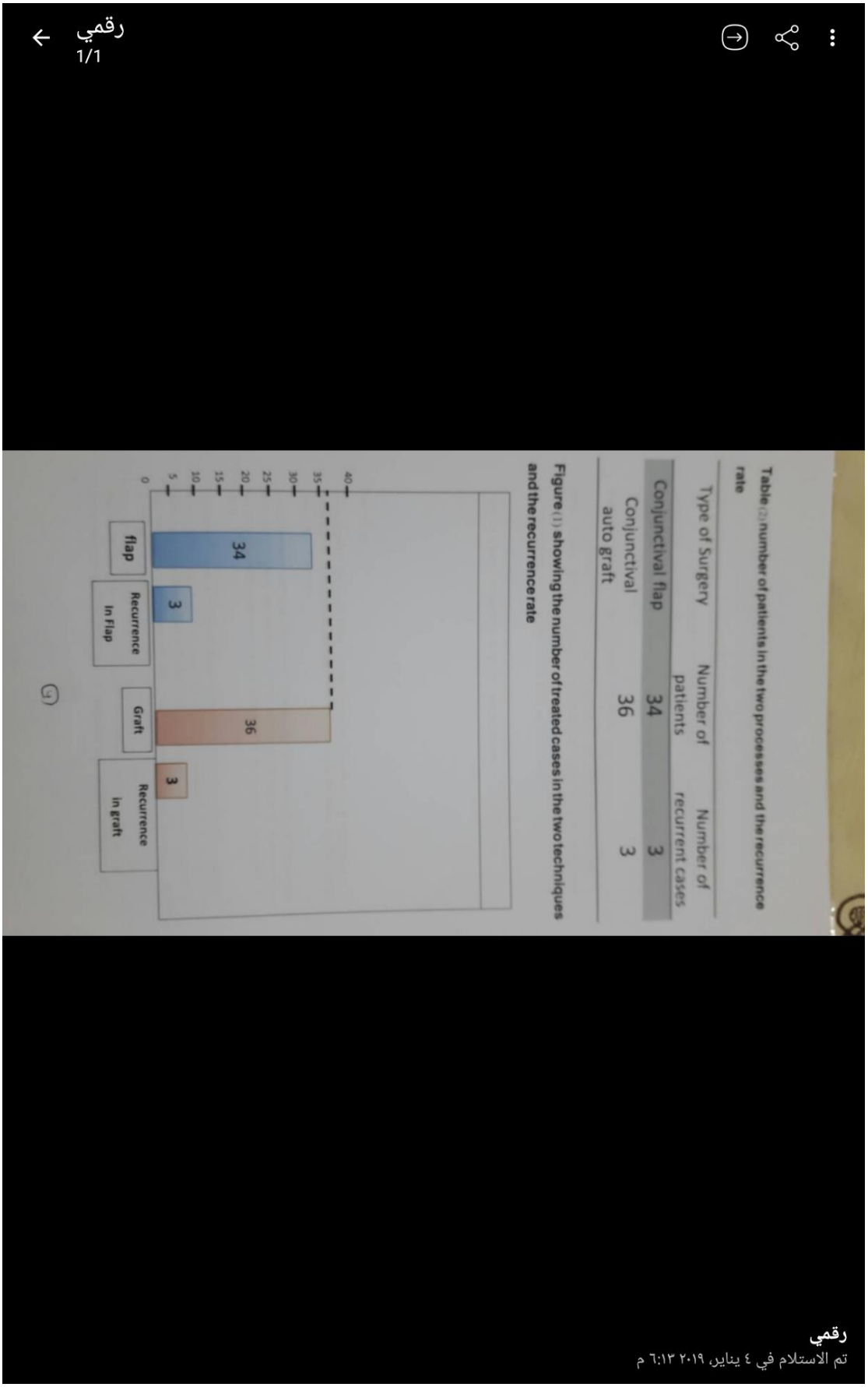
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Table (2) number of patients in the two processes and the recurrence rate
Type of Surgery
Number of patients
Number of recurrent cases
Conjunctival flap
34
3
Conjunctival auto graft
36
3
Figure (1) showing the number of treated cases in the two techniques and the recurrence rate
40
35
30
25
20
15
10
5
0
34
3
36
3
flap
Recurrence In Flap
Graft
Recurrence in graft
(1)
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