Introduction:

Pterygium is a degenerative condition of conjunctiva in which abnormal fibroproliferative tissue extends to the cornea in the interpalpaberal region. Exposure to Ultraviolet rays causing damage to limbal stem cell is the recently accepted theory for its occurrence. Though surgery is the treatment of choice, recurrence is most often encountered problem. Many studies are done to reduce the complications in which now a days, autologous conjunctival graft with limbal tissue are having a less complication.

In our study we had compared fibrin glue and suturing technique for fixing the limbal autograft. Fibrin is a blood derived product which act as a biological glue. It is easy to use and absorbable. It mimics last stage of coagulation cascade. We used 10-0 ethilon suture material for suturing the autograft to the sclera bed. We compared these two techniques in means of comfort of the patient, duration of the surgery, post operative complication and recurrence.

Materials and methods:

Sample size: 50 patients who presented in the period of January to September 2017 with nasal or temporal pterygium were included for the study. Informed consent was taken from all patients after explaining the procedure. After completion of general ophthalmologic examination, patients were divided into two groups randomly by systemic random sampling method.

• Group I: pterygium excision with conjunctival autograft using fibrin glue.
• Group II: pterygium excision with conjunctival autograft using 10-0 ethilon suture fixation.

Duration of the surgery was noted from the first incision to removal of lid speculum.

Methods:

Under local peribulbar anaesthesia, surgical site and eye lashes were cleaned and sterile drape was applied in place. After applying wire speculum, pterygium head was dissected from its corneal attachment by using surgical blade. The fleshy pterygium tissue located under conjunctiva was carefully resected with conjunctival scissors. By using the calipers sclera bed was measured and matching size of conjunctival limbal autograft was harvested from supero temporal region. In group I fibrin glue was applied using duplojet injector over the surface and the autograft placed over the bare area. In group II patients 3 to 4 sutures were applied by using 10-0 ethilon to fix the graft over the bare area.

Post operatively antibiotic steroid were given topically and followed on 1st day, 3rd day, 1st week, one month and third month.

Objective complaints like pain, irritation, watering were enquired and graded. Subjective signs like graft edema, hyperemia were assessed by using slit lamp.

Results:

Age distribution:

Group I had 25 patients in the mean age group of 38.00(S.D-11.51). P value of 0.598(p>0.05) which was found to be not significant.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>AGE DISTRIBUTION(MEAN VALUE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIBRIN GLUE GROUP</td>
<td>38.00</td>
</tr>
<tr>
<td>SUTURED GROUP</td>
<td>46.00</td>
</tr>
</tbody>
</table>

Sex distribution:

In group I 14 male and 11 female patients underwent glue technique and in group II 11 male patients 14 female patients underwent suture technique. These data’s were analyzed using chi square test and p value was > 0.05 and found was not significant.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>MALE</th>
<th>FEMALE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIBRIN GLUE</td>
<td>56%(14)</td>
<td>44%(11)</td>
<td>50%(25)</td>
</tr>
<tr>
<td>SUTURE</td>
<td>44%(11)</td>
<td>56%(14)</td>
<td>50%(25)</td>
</tr>
</tbody>
</table>

Post operative signs and symptoms:

Patient’s discomfort, irritation, stinging sensation was compared in both group and analyzed using chi square test. Group I patients experienced less discomfort as compared to group II resulting in a significant P value (<0.05).

<table>
<thead>
<tr>
<th>COMPLICATION</th>
<th>FIBRIN GLUE</th>
<th>SUTURE GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCOMFORT LEVEL</td>
<td>4%(1)</td>
<td>92%(23)</td>
</tr>
<tr>
<td>GRAFT EDEMA</td>
<td>4%(1)</td>
<td>72%(18)</td>
</tr>
<tr>
<td>GRAFT RECESSION</td>
<td>0%</td>
<td>28%(7)</td>
</tr>
</tbody>
</table>

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Results:

Sex distribution:

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Surgery time:
Duration of surgery was analyzed with independent t test and had a significant P value - 0.016(<0.05).

<table>
<thead>
<tr>
<th>GROUP</th>
<th>TIME TAKEN FOR SURGERY (MEAN VALUE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIBRIN GLUE</td>
<td>12.00 MINUTES +/- 0.15</td>
</tr>
<tr>
<td>SUTURE GROUP</td>
<td>23.42 MINUTES +/- 0.20</td>
</tr>
</tbody>
</table>

Recurrence rate:
Patients were followed up at 1st, 3rd and 6th for assessment of recurrence. Recurrence was nil in both the groups.

Fig 2: Duplojet Injector

Discussion:
Though limbal auto graft was an ideal procedure in prevention of recurrence after pterygium surgery, suturing technique requires a high level of surgical expertise, prolonged duration of surgery, possibility of suture related complications, post operative discomfort to the patient. An increase in the inflammatory response around sutures in conjunctiva seems to be responsible for these complications.

By replacing the sutures with fibrin glue reduces the suture related complications, reduces the time taken for surgery and less discomfort to the patients.

According to our study we found that 50% were males and 50% were females. In our study discomfort was noted more in suture group (23 patients (92%) as compared to glue 1 patient (4%). Graft edema was observed commonly in suture group patient when compared to fibrin glue patient (72 % and 4% respectively) due to surgical manipulation. Graft edge recession was noticed in 28% of the suture group patients where as none of patient encountered recession in fibrin glue group. There was no evidence of recurrence in neither group of the study.

The average duration of surgery for fibrin glue group was 12 minutes and 23 minutes for suture group, this compares Baher et al study in which mean operating time was 16 and 20 minutes for fibrin glue and suture group respectively.

Conclusion:
Sutureless fibrin glue conjunctival autograft technique is effective, less time consuming with less post operative discomfort to the patients as compared to sutured conjunctival autograft. Hence fibrin glue autografting is a good technique and the patient stands to benefit on account of early return to normal life with less discomfort.

References: