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Sutureless and *Glue Free* Conjungtival Autograft in Pterygium Excision

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Abstract: ***Introduction:*** *Pterygium is a pathological growth of fibrovascular tissue derived from thickening and folds of the bulbar conjunctiva which is degenerative and invasive. Many techniques for placing Free Graft, Sutureless and Glue free Techniques on pterigium surgery are more recommended than with stitches and glue.* ***Method:*** *A man, 47 years old, came with chief complaint of foreign body sensation in his right eye since ± 6 months ago.Patient also complaint of watering eyes in his right eye, itchy , red eyes when exposed to dust. Patients were treated with pterygiumexcision with sutureless and glue free techniques.* ***Result:*** *Patients were followed up postoperatively after 24 hours, 1 week, and 1 month after surgery. At 1 month after surgery, the graft has been well attached with the surrounding conjunctiva.* ***Conclusion:*** *Pterygium surgery with sutureless and glue free techniques with conjunctivalautograft is a viable option for pterygium surgery for primary pterygium management because it is more effective in terms of cost and time and fewer complications.*

Keywords: *Sutureless* and *Glue free*, Autograft, Pterygium Excision

1. Background

Pterygium is a pathological growth of fibrovascular tissue derived from the thickening and fold of the bulbar conjunctiva which is degenerative and invasive. Pterygium looks like a flashy pinkish triangle that are consist of many vascular network, its tip reach the cornea and its base at the periferal.[1] One of the surgery technique on pterygium is the conjungtivalautograft transplantation where the free graft usually taken from the bulbar conjungtiva superior, excision site according to the length of the wound and then transfer to the excision area.[2]Conjungtivalautograf transplantation is the most effective method in lowering the complication and risk of recurrence (2-9%)[3]. There are few methods to locate the Free Graft which is with suture, fibrin glue and suterless and glue free. In surgery with suture often leads to postoperative discomfort, scarring and granuloma formation, and takes longer surgery time about 20-40 minutes.[4]Pterygium surgery that use fibrin glue method first intoduced by Chohenet all in 1993. This technique is more simple, faster, and lesser pain and discomfort in patient. The flaws in using fibrin glue is that the price is expensive.[5]Sutureless and glue free technique use autologous blood for bioadhesif and graft fixation[6]

Naeimaet all highly recommend this sutureless and glue free technique for pterygium surgery. The efficacy of this technique includes cheaper cost, less surgery time, less complications, no postoperative discomfort, and easy to learn[7]

2. Case

A male aged 47 years old came to wangaya General Hospital clinic at June 19, 2018 with chief complain discomfort on the right eye since 6 months ago. The discomfort then follows by tears coming out from both eyes continously, itchy, and the eyes turn red when in contact with dust. The patient never had any treatment before. No history of past illness.

From the physical examination: composmentis, BP 120/80 mmHg, HR 85 bpm, RR 20 times/ minute and temperature 36,4 °C.Normal physical examination from head to toe. On the eye examination, the visual acuity test got 6/6 on both eyes. On the right bulbar conjunctiva there was a fibrovascular tissue in triangle shape with its tip pointing to the cornea from nasal and pass the limbus.

The patient goes through pterygium excision with sutureless and glue free technique. After the operation, the patient was given medication of topical mixture of antibiotic and steroid (Tobramycin and Dexamethasone). This eye drop was given 4 times a day. Analgetic (meloxicam) was also given 2 times a day. The patient also given the education to protect the eye from water.

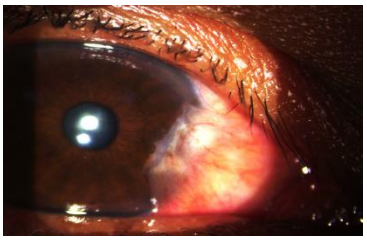

Figure 1: Grade III pterygium of the right eye

3. Operation Technique

Operation done in the Wangaya Regional General Hospital operating room. Before the operation, the patient undergo the disinfectant with RL :Betadine = 9:1 on the eye. The speculum then place on the conjungtiva and given the local anesthesia with lidocain 2% injected 0,5-1 ml on the subconjungtiva and subpterygial (to separate the pterygium tissue from the sclera).

The head of the pterygium then being seperated from the cornea tissuebelow with cresent.The body of the pterygium then being exicisied at least 4-5 mm of the pterygium and including the superior and inferior borders.Irigation with normal saline can be done troughout the operation. Cauter is

not being used, except there was an active bleeding. The size of the bare sclera defect was then measured with pinset. Now, approximately 0.5 ml xylocaine 2% was used to balloon up aconjunctival flap in superior quadrant dissection was performed to remove most of the tenons tissue in the autograft. A thin film of blood clot was allowed to form overthe bare sclera.The graft is moved over the conjunctival defect, with care taken to maintain the limbus to limbusand stromal side down orientation.A gentely pressure can be applied to the graft attached to the crescent. The edges are held with forceps for 10 to 15 minutes to give adequate time for graft fixation to occur. The eye was then patched for 24 hours after operation. After the surgery, the patient instructed to not rub the eye and to not get the eye wet. Patient was given a topical mixture of antibiotic and steroid (Tobramycin and Dexamethasone) eye drops which given 4 times a day for 1 week and an analgetic drug (Meloxicam).

4. Result

Patient was evaluated for 24 hour, 1 week and 1 month post operation. Patient was evaluated on the visual acuity test, slit lamp examination, and tonometry to evaluate the complication, recurrence and the outcome.

During the 24 hour evaluation postoperative, the problem that occurs is mild such as inflamation, subconjungtival bleeding and watery eyes. The graft was well placed (no graft retraction, the graft did not stick, and no missing graft). On the superior part there is no problem/ complication.

One week postoperative, the inflamation began to diminished. There is still subconjunctival bleeding present but lesser than the first time. The patient still given the eye drops to apply.

Figure 2: 24 hour post excision

One month postoperative, the patient was being reevaluate. There are several findings such as the graft has now merge with the conjunctiva around it. No inflamation and subconjunctival bleeding were found.

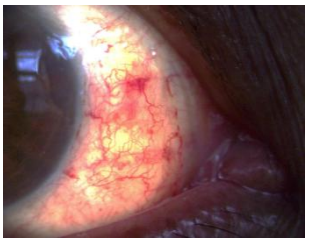

Figure 3: 1 Month post excision. The graft has now merge with the surrounding conjungtiva

5. Discussion

The recurrence is the most identified complication of pterygium surgery. There are few technique being developed to make the recurrence rate lower.

The placement of conjungtival graft alone was the standart procedure. Placement of graft with conjungtival suture was a very popular surgery procedure at the moment with the weakness of long operation time, postoperative discomfort, abces forming in the suture, and granuloma formation. The most important to acknowledge with the use of fibrin glue is the cost and the potential risk of infection.

Therefore, the sutureless and glue free technique was more effective because it is cheeper and lesser surgery time. With this technique, the patient will feel more comfortable after surgery, no pain after the surgery. On the cosmetic point of view, it gives a good result. The disadvantage of this method is the risk of losing the graft postoperative. The loss of the graft usually happens during 24-48 hour postoperative. This complication happens due to the larger graft or inadequate excision of the pterygium. In this case, there is no complication found.

6. Conclusion

The excision of the pterygium with sutureless and glue free technique with limbalconjungtivalautograft is the right choice of surgery as the primary management of pterygium. This technique gives a great outcome, effectiveness (in terms of cheaper cost), lesser time, and safety. The complication that can occur is lesser than the complication caused by using fibrin glue and suture.

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