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Pterygium Excision with Sutureless Glueless Conjunctival Limbal Autograft for Management of Primary Pterygium in Rural Population Under Subconjunctival Anaesthesia

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ABSTRACT

Introduction: When fibrovascular tissue grows abnormally in bulbar conjunctiva and is getting spread over cornea in a chronic manner, the resultant is pterygium. The reason why this pterygium is happening are many but broadly can be categorized into hereditary and due to the environment where the person is residing. Various techniques have been developed for pterygium excision with variable success rates. Pterygium excision with conjunctival limbal autograft under sub-conjunctival anesthesia with no glue and no suture technique has exhibited good results minimizing the complications associated with peribulbar/ retrobulbar block, suture and glue.

Material And Method: This retrospective study of 35 cases operated at Krishna Institute of Medical Sciences to be deemed university, Karad, Satara district (13 males and 22 females) between December 2017 to December 2018. Age group of cases was 30 years to 65 years. Preoperative ocular examination included refraction and assessment of best- corrected visual acuity, slit lamp biomicroscopy, baseline intraocular pressure (IOP), fundus examination, and photographic documentation of pterygium. Various test have been conducted such as Blood pressure, sugar level, bleeding and clotting time, ELISA, HbsAg, HCV test. Before surgery, Informed consent and physician fitness report for surgery was obtained from all patients. Pterygium excision with conjunctival limbal autograft under subconjunctival anaethesia was performed without use of suture or glue.

Result: In our study, there was 0.5mm to 2mm of gapseen between medial side of graft and dissected conjunctiva in 7 cases. Mild postoperative pain (1-3 NRS) was found in 6 cases. No graft dislocation or graft loss was found.. The mean surgical time required was of 10 minutes.

Conclusion: Using no glue and no suture technique, when attaching the conjunctival limbal autograft in pterygium surgery under subconjunctival anesthesia causes significantly less postoperative pain and discomfort, no complication related to peribulbar or retrobulbar block, shortens surgery time significantly and has no chance of recurrence. It is highly cost effective especially for rural population.

Keyword: Rural population, primary pterygium, subconjunctival anesthesia, pterygium excision, conjunctival limbal autograft, sutureless, glueless.

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INTRODUCTION

In case of pterygium "wing-like" structure comes out that has a shape of triangularin. It used to be fleshy along with conjunctival epithelium and hypertrophied subconjunctival connective tissue which is happening nasally and/ or temporally in the palpebral fissure with into the cornea.[1] Pterygium can happen due to many factors. The factors include Genetical inheritance as well as environmental factors too. The environmental factor may include the dry atmosphere, air pollution. The geographical location can also be a factor as the location decides the type of atmosphere and the level of air pollution. Previous researches show that hereditary factors contribute significantly in the occurrence of pterygium[2]. It has been found that region having warm as well as dry climate are more prone to Pterygium[3]. Not only this but the poor people residing in villages are also more prone to this disease and the reason is that the people are forced to live out in open air for more time than inside the houses. This is how they face direct the similar type of wind that lead to Pterygium.[4] The common symptoms that has been reported clinically is the redness of the eyes, irritation in the eyes at the same time vision got decreased with ocular discomfort[5]. Treatment of choice is the surgical removal. Pterygium excision with conjunctival autograft has exhibited good results because it maintains the ocular surface even and restores the anatomy which existed before the corneal invasion caused by the pterygium. The bare scleral bed is covered with conjunctival sutures such as Vicryl/ 10-0 nylon or by means of biological tissue glue. Pterygium excision with autologous conjunctival grafting seems to be the best method, giving both low recurrence rate and high safety.[6] In most of the cases, the recurrence is seen within 6 months but sometimes can occur later.[7] Subsequent complications such as pyogenic granuloma formation are easily treated. Others such as symblepharon, forniceal contracture, ocular motility restriction, diplopia, scleral sclerosis and infections are much more difficult to manage and may be sight threatening.[8] The fibrin stick is produced from the plasma that is getting extracted from the human. In these cases the danger of transmitting sicknesses is very common. Transmission of hepatitis alongwith parvovirus B19 is taking place due to glue[9]. Subconjunctival sedation for pterygium medical

procedure has become the strategy of decision for larger part of patients since it stays away from the undesirable confusions of peribulbar/retrobulbar anesthesia (retrobulbar haemorrhage, chemosis, optic nerve injury, globe perforation).[10]

We depict a basic strategy for accomplishing conjunctivallimbal autograft adherence during pterygium extraction medical procedure under subconjunctival sedation staying away from the potential complexities of peribulbar/retrobulbar square, stitches and natural paste.

MATERIAL AND METHODS

A retrospective study of 35 cases operated at Krishna Institue of Medical Sciences to be deemed university, Karad, Satara district (13 males and 22 females) between December 2017 to December 2018. Age group of cases was 30 years to 65 years. Mean age group of Females (30 years- 55 years) was 32.5 years. Mean age group of Males (35 years -65 years) was 40 years. Preoperative ocular examination included assessment of best- corrected visual acuity, slit lamp biomicroscopy, baseline intraocular pressure (IOP), dilated fundus examination and photographic documentation of pterygium. Blood pressure, Blood sugar, bleeding time, clotting time, ELISA, HbsAg, HCV and xylocaine sensitivity test was performed. Before surgery, Informed consent and physician fitness report for surgery was obtained from all patients.

Eyes were painted with 5% povidone iodine and draped.Patients were anaesthetised by infiltration of graft and superotemporal conjunctiva with 2% preservative free xylocaine. A small conjunctival incision on neck of pterygium was made and dissected close to limbus with separation of underlying subconjunctival growth and inner tissue of pterygium. The tenon's capsule was dissected upto the edges 2mm ahead of insertion of medial rectus. The head of pterygium was dissected. Pterygium was carefully dissected out from cornea with 15 no. blade. Mild wet field cautery was done to control bleeding. The size of defect was measured with Vernier caliper. A thin Tenon free conjunctival Autograft with limbal stem cell from superotemporal conjunctiva was excised. Autograft was placed over bare sclera and orientation was kept from limbus to limbus. The graft was kept in place for 10 minutes. Eye pad given with topical Chloramphenicol 1% eye ointment + Dexamethasone 0.05% eye ointment for 24 hours. Post-operatively moxifloxacin 0.5% and dexamethasone 0.1% combination eye drops were initially given six times a day and tapered over four weeks period. Lubricating eye drops (CMC 1%) was given 2 hourly. Along with oral Ibuprofen (400mg) + paracetamol (325mg) twice a day for five days. Patients were followed up after 24 hours, 1 week, 1 month, 3 months and 1 year.

RESULT

All together there were 35 cases which had been accepted for pterygium excision with sutureless, glueless conjunctival limbal autograft. Among all these 35 patients 13 (37% approx.) reported to be male whereas 22 reported to be female patients. It had been found that all these patient were suffering from primary nasal pterygia. Mean surgical time was 10 minutes ranged from 9 to 11 minutes.

Table1: Patients under different variable

Variable	Subgroup	Number Of Patient	Percentage Of Patient
Type of pterygium	Nasal	35	100
	Temporal	0	0
Sexual category	Masculine	13	37.14
	Feminine	22	62.85
Operative Duration	9 minutes	10	28.57
	10 minutes	15	42.85
	11 minutes	10	28.5

From the Table 1 it can be seen that none of the patients are having temporal and all of the cases has nasal pterygium. Most of the patients are females (62.85%). The surgeries time in most of the cases lasted for 10 minutes only.

Table 2: Amount of Gap

Variable	Cases	Amount Of Gap	Percentage
Gap between medial side of graft and	3	.2 mm	8.57
dissected conjunctiva	3	0.5 mm	8.57
(0.5mm- 2 mm)	1	1.0 mm	2.58

Table 2 shows that 0.5mm – 2mm was Mean gap seen between medial side of graft and dissected conjunctiva. 0.5mm and 2mm gap was seen in 8.57 % cases respectively. 2.58 % cases showed 1mm of gap.

Table 3: Post-Operative Pain Score (0-10) (Numeric Rating Scale)

Score	Intensity	Number	Percentage
0	No pain	0	0
1-3	Mild pain	6	17.1
4-6	Moderate pain	0	0
7-9	Severe pain	0	0
10	Worst pain	0	0

Table 3 shows that 17.1 % (6 numbers) of the total cases reported the complaint relating to mild postoperative pain. The score for this was 1-3. None of the patient had graft dislocation or graft loss. Further we never found the recurrence of pterygium mass.

DISCUSSION

It was a non-randomised study performed on 35 cases to study the outcome of pterygium excision with suturelessglueless conjunctival limbal autograft under subconjunctival anaesthesia. Durationwas from December 2017 to December 2018 with follow up period for 9 months to 1 year. Sharma et al[11]and Bhargava et al[12]reported the maximum incidence of pterygium in the age group ranging between 30-50 years. In our study the average age of patients was 30-65 years. Sharma et al[11] reported a higher incidence of the disease in females similar to our study. In the present study higher incidence of pterygium was observed in the population of rural areas similar to a study done by Rohatgi S[13]which showed that the incidence being more in rural areas (72%).

Adequate anesthesia is essential for patient cooperation and surgical procedure. There have been studies on primary pterygium excision under peribulbar or retrobulbaranaesthesia. However, there is sparse literature on pterygium excision with suturelessglueless autologous conjunctival graft performed under subconjunctival anaethesia. Bhargava et al[12] had post-operative complications like graft displacement in 4 cases (7.69%) on 1st post-operative day and mild graft edema was noted in 4 (7.69%) cases in first week. There was hematoma below graft in 3 (5.76%) cases and in 1 case it persisted for 1 month. Recurrence was seen in 1 (1.92%) case in the 12-month follow-up period. In our study, there was some amount of gap (0.5 mm – 2mm) seen between medial side of graft and dissected conjunctiva in 7 (20%) cases. Mild postoperative pain (1-3 NRS) was found in 6 (17.1%) cases. No graft dislocation or graft loss was found.

CONCLUSION

In patients of rural population where incidence of pterygium is found more, Pterygium excision with sutureless, glueless conjunctival limbalautograft is found excellent as our technique had: No complication related to peribulbar/ retrobular anaesthesia. No use of suture and biological glue which madethe technique cost effective. No recurrence of pterygium mass. No need for further intervention required which made it most suitable for rural setup.

CONFLICT OF INTEREST

None

REFRENCES

1. Chui, Jeanie, et al. "Ophthalmic pterygium: a stem cell disorder with premalignant features." *The American journal of pathology* 178.2 (2011): 817-827.
2. Saw, Seang-Mei, and Donald Tan. "Pterygium: prevalence, demography and risk factors." *Ophthalmic epidemiology* 6.3 (1999): 219-228.
3. Fotouhi, A., et al. "Prevalence and risk factors of pterygium and pinguecula: the Tehran Eye Study." *Eye* 23.5 (2009): 1125-1129.
4. Hashemi, Hassan, et al. "The prevalence and determinants of pterygium in rural areas." *Journal of current ophthalmology* 29.3 (2017): 194-198.
5. Mahar, P. S., & Manzar, N. (2013). Pterygium recurrence related to its size and corneal involvement. *Journal of the College of Physicians and Surgeons Pakistan*, *23*(2), 120.
6. Allan, B. D., Short, P., Crawford, G. J., Barrett, G. D., & Constable, I. J. (1993). Pterygium excision with conjunctival autografting: an effective and safe technique. *British journal of ophthalmology*, *77*(11), 698-701.
7. Sebban, A., & Hirst, L. W. (1991). Pterygium recurrence rate at the Princess Alexandra Hospital. *Australian and New Zealand journal of ophthalmology*, *19*(3), 203-206.
8. Vrabec, Michael P., Robert W. Weisenthal, and Sarah H. Elsing. "Subconjunctival fibrosis after conjunctival autograft." *Cornea* 12.2 (1993): 181-183.
9. Ang, Leonard PK, Jocelyn LL Chua, and Donald TH Tan. "Current concepts and techniques in pterygium treatment." *Current opinion in ophthalmology* 18.4 (2007): 308-313.
10. Duker, Jay S., et al. "Inadvertent globe perforation during retrobulbar and peribulbar anesthesia: patient characteristics, surgical management, and visual outcome." *Ophthalmology* 98.4 (1991): 519-526.
11. Sharma, Ashok, et al. "Sutureless and glue-free versus sutures for limbal conjunctival autografting in primary pterygium surgery: a prospective comparative study." *Journal of clinical and diagnostic research: JCDR* 9.11 (2015): NC06.
12. Bhargava, Poonam, A. Kochar, and R. Joshi. "A novel technique–Pterygium excision followed by sutureless and gluefree conjunctival autografting." *Acta Medica Scientia* 2 (2015): 6.
13. Rohatgi, Sanjeev. "Pterygium: An epidemiological study in India." *Int J Healthcare Biomed Res* 4 (2013): 297-301.

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