Original Article

Possibilities and effectivness of topical anesthesia for simple corneal repair

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Objective: To determine the possibilities and effectiveness of topical anesthesia for simple corneal repair.

Methodolgy: This descriptive study was carried out at Govt Lady Reading Hospital, Peshawar, Khyber pakhtunkhwa, Pakistan from January 2012 to June 2013. Using Non probability purposive sampling technique 52 patients underwent corneal repair for perforation under topical anesthesia. Unsuccessful repairs were operated on the next day under general anesthesia. These cases were used as controls.

Results: Out of 52 patients, 45(86.5%) were male and only 7 (13.5) female. Mean age was 33±5 years. Success was achieved in 48 (92.3) cases and only 4 (7.7%) were unsuccessful. Pain was reported in 5 (9.6%) cases, photophobia from operating microscope light in 04 (7.7%) cases and in only one (1.9%) patient felt anxiety and movements during surgery. All these were re operated under ketamine successfully. When operated under general anesthesia, the pain and discomfort were totally.

Conclusion: Topical anesthesia for simple cornea repair was a possible and effective viable option in cooperative selected patients with few complications. Most hazards of general anesthesia can be avoided in many patients. (Rawal Med J 2014;39:300-302).

Key words: Topical anesthesia, corneal perforations, simple cornea repair, trauma.

INTRODUCTION

Topical anesthesia (TA) is used for various ocular procedures like intra ocular pressure measurements and corneal scraping. Topical proparacain hydrochloride 0.5 % (alcain) eye drops are commonly used.[1] Phacoemulsification is common procedure done under topical anesthesia.[2] Corneal perforations are very common ocular emergencies which needs urgent repair. Most of the time, the tertiary care centers receives such patients for treatment. One main reason is the lack of facility of general anesthesia (GA) in peripheral areas. Moreover, if a patient is not fit for GA, this is another reason for delay in wound repair.

Topical anesthesia improves chances of better results by early closure of corneal perforations, there by restoring anatomy of cornea and has fewer complications.[3]

It can be useful in those corneal perforations which were smaller in size, have no iris in the wound, no sclera involvement and not very badly wounded eyes. With appropriate case selection, TA can be used with excellent results.[4] The aim of this study was to determine the possibilities and effectiveness of TA for simple corneal repair.

METHODOLOGY

This descriptive study was carried out at Govt Lady Reading Hospital, Peshawar, Khyber pakhtunkhwa, Pakistan from January 2012 to June 2013. 52 patients between age 15 to 60 years, who presented to us with simple corneal perforation were included in the study. Before the surgery, slit lamp examination was carried out. Patients below 15 years of age, above 60 years of age, complicated corneal injuries, extensive corneal perforations, associated scleral perforation, shallow anterior chamber, patients with hearing problems and those unwilling for corneal repair under TA were excluded from the study. Unsuccessful repairs were operated on the next day under rescue anesthesia i.e. GA. Hospital Ethics Committee approved the study and an Informed written consent was obtained from all patients.

Corneal repair was done using topical proparacain hydrochloride 0.5 % (Alcain) eye drops under operating microscope. Patients were kept under observation for one day and upon successful repair, were discharged. Follow up was carried out on first postoperative day, one month and 6th month. Unsuccessful repair and patients who were

uncooperative during surgery, were re-operated under GA (ketamine) on the next day. Cases were labeled successful if there were no loose sutures, no exposed sutures, no wound gape and reported no pain or photophobia and were cooperative during surgery.

RESULTS

Out of 52 patients, 45(86.5%) were male and 7 (13.5) were female. Mean age was 33±5 years (range 15-60). Postoperative success was achieved in 48 (92.3) cases and only four (7.7%) were unsuccessful (Table 1). Pain and photophobia from operating microscope light were most commonly reported side effects (Table 2).

Table 1. Postoperative success (n=52).

Result	Number	Percent
Successful	48	92.3
Unsucessful	04	7.7
Total	52	100

Postoperative complications were seen in 4 (7.7%) patients; loose sutures and exposed suture being the commonest (Table 3). Unsuccessful cases were re-operated under ketamine successfully. In them, pain and discomfort were totally absent.

Table 4. Discomfort reported by the patient during surgery (N=52).

Detail of discomfort	Number	Percentage
Pain	05	9.6
Photophobia	04	7.7
Anxiety	01	1.9
None	42	80.7
Total	52	100

Table 4. Postoperative complications (n=52).

Complication	Number	Percentage
Loose sutures In cornea	02	3.8
Exposed sutures In cornea	01	1.9
Shallow anterior chamber	01	1.9
None	48	92.3
Total	52	100

DISCUSSION

Cornea is among the structures commonly involved in ocular trauma. If cornea perforations are not repaired on time, loss of viability of corneal tissue can occur. Selection of type of anesthesia is crucial for intraocular proceedures.[5] General anesthesia is one of the important components of traumatic wound repairs of the eye but delay can occur because of the non availability of GA in peripheral part of the country. Some corneal perforations are so simple that can be repaired under TA.[6] Intraocular surgeries particularly anterior segment surgeries like cataract surgery, keratoplasty and even squint surgery have been performed under TA.[2,7-9] Most of the surgeries on cornea can be completed with comfort.[10-14]

In our study, we took the idea from studies conducted on corneal procedures, particularly cataract and corneal graft operated under TA.[15-17] TA anesthetizes corneal pain sensitive nerves[18,19] and is safer than GA, especially because the later is associated with complications like increase in intraocular pressuer.[12,13]

Postoperative results of surgeries on anterior segment under TA are very good.[1,8] In our study, 93.3% cases were successful in term of safety and patient comfort. In only 4 cases, we found loose sutures, in 3 cases, exposed sutures and in only one case we noted a shallow anterior chamber. It was reformed on next day under ketamine. In a study performed for corneal graft, under TA, for perforated corneal ulcer, the outcome of surgery was very good and patients were quite cooperative.[17]

In far periphery of the country, availability of GA facilities and the hazards associated with GA make TA more convenient and easy.[1] in such areas, if corneal perforations are presented to the ophthalmologist, it is very easy to repair them under TA. However, proper follow up after repair is very important so that any complications can be solved well on time.

Most common problem faced by patient was visual awareness like photophobia from light of operating microscope, as noted by others.[16,20] In our study, commonest problem was pain during repair (9.6%) and photophobia (7.7%). Therefore, proper

counseling before starting the procedure is very useful in decreasing this complaints.

CONCLUSION

Topical anesthesia for simple cornea repair was a possible and effective option in cooperative selected patients. Pain, photophobia an anxiety were the common problems during the procedure. Commonest postoperative complication was loose sutures. Most of the hazards of general anesthesia can be avoided by use of topical anesthesia especially in the far periphery.

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