CASE REPORT

A CASE SERIES OF THREE PATIENTS WITH BILATERAL CORNEAL ABRASION AND ROLE OF EYE PAD IN HEALING OF CORNEAL ABRASION

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ABSTRACT

Corneal abrasion is common presenting problem at an eye casualty department. Although short lasting, a corneal abrasion gives rise to marked discomfort and visual disability and requires prompt management. Eye pad is commonly used in the treatment of corneal abrasions. Need for use of eye pad in the healing of corneal abrasions was evaluated.

Keywords: corneal abrasion, eye pad, chemical injury, corneal epithelial healing.

INTRODUCTION

Corneal abrasion is one of the commonest presenting problems in eye casualty. It is often painful, sometimes disabling but usually self-limiting. Established treatment is to apply a topical antibiotic, cycloplegic followed by firm eye pad.[1] Eye padding is felt to offer a stable corneal environment for epithelial healing. But there are some theoretical and practical disadvantages. A dressing may reduce corneal oxygenation and increase corneal temperature which could slow epithelial healing and predispose to secondary infection. Besides that, many patients feel discomfort while wearing an eye pad which is relieved by its removal. In this case series of three patients with bilateral corneal abrasion, the rate of healing and level of discomfort in patched eye was compared with that of their un-patched eye.

CASE HISTORY

Three patients in age group of 20-25 years with history of chemical gas exposure presented with chief complaints of photophobia, pain, foreign body sensation, watering and redness in both eyes along with blurring of vision. They developed above symptoms two-three hours after exposure to some chemical gas while working in a factory. There was no history of trauma, exposure to radiation or any foreign body going inside the eye.

Ocular examination revealed lid oedema, blepharospasm , ciliary congestion and a large central epithelial defect of almost equal size in both the eyes of all the three patients. Rest anterior segment was within normal limits and there was no evidence of limbal ischemia in any of the three patients. Posterior segment was not visualized due to corneal haze.

A thorough eye wash was given to all the three patients. After staining the cornea with fluorescein stain, abrasion size was measured by taking maximum horizontal and vertical dimension with the help of slit beam of slit lamp. Their right eyes were managed by ointment chloramphenicol, eye drop homatropine two percent and a tight eye patch while their left eyes were managed by ointment chloramphenicol TDS and eye drop homatropine two percent twice a day. Patients were reviewed back after every 24 hours interval to monitor the healing rate and subjective level of discomfort, which was assessed on a visual analogue scale. The scale ranged from 0 to 100, with 0 representing no pain and 100 representing severe pain. Abrasion healing was considered to be complete when fluorescein staining was negative. After complete healing all the patients were instructed to use ointment chloramphenicol thrice daily for three days and to return for final assessment after 7 days.

RESULTS

It was found that there was no significant difference in healing rate of right eye (patched eye) of all the three patients with that of their left eye (unpatched eye). It took almost three days for complete healing in both the eyes. The amount of pain and discomfort on the basis of visual analogue scale were almost same in both the eyes which gradually reduced to nil on day two in all the three patients (Figure 1), (Figure 2), (figure3).

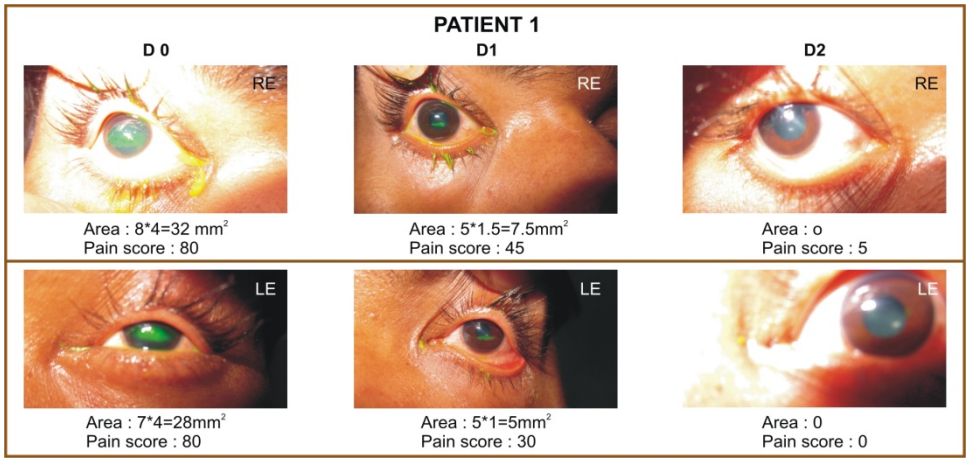

Figure 1: Corneal abrasion in RE-right eye (patched eye) and LE-left eye (unpatched eye) of patient-1 on day zero (D 0), day one (D 1) and day two (D 2), along with the pain score on that respective day

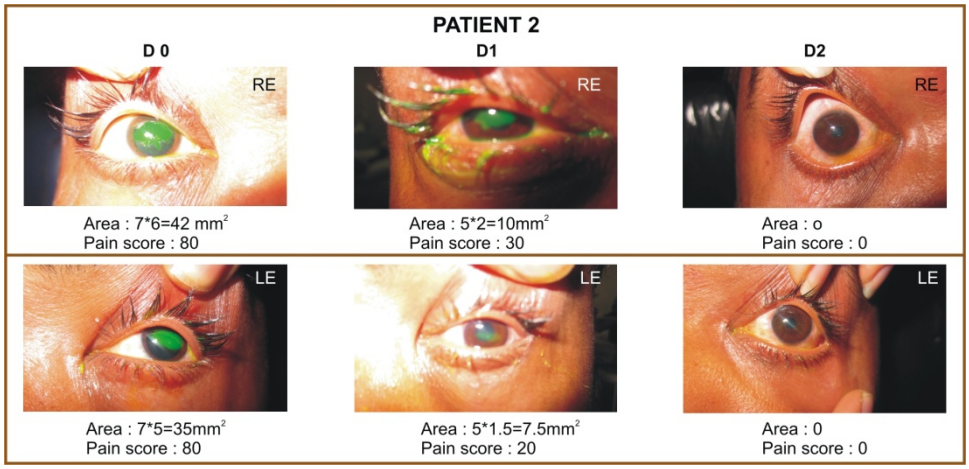

Figure 2: Corneal abrasion in RE-right eye (patched eye) and LE-left eye (unpatched eye) of patient-2 on day zero (D 0), day one (D 1) and day two (D 2), along with the pain score on that respective day

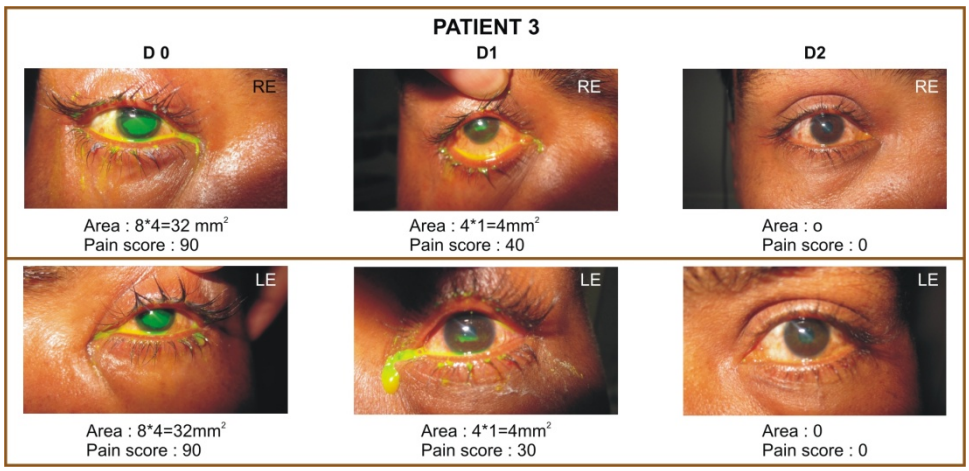

Figure 3: Corneal abrasion in RE-right eye (patched eye) and LE-left eye (unpatched eye) of patient-3 on day zero (D 0), day one (D 1) and day two (D 2), along with the pain score on that respective day

DISCUSSION

Corneal epithelial abrasions heal by the process of cell migration and cell proliferation.[2,3] A study has shown that patients treated with antibiotic ointment and mydriatic drops alone showed significantly faster healing than those given an occlusive eye pad and bandage as well.[4] With both methods of treatment all abrasions in

this study healed within three days. Our study has shown that the rate of healing in patched eye is almost equal to that of un-patched eye.

The role of blinking as a factor which retards healing is questioned by our study. In our study we have found prevention of blinking by using eye pad doesn't necessarily improves the rate of healing.

The change in pain score after 24 hours was not significantly different between patched and unpatched eyes. Also wearing an eye pad caused discomfort to the patient.

It should also be noted that patching of both the eyes in cases of bilateral corneal abrasion would have made them bed ridden and dependent. But here, all the three patients were ambulatory.

Eye patching is no longer recommended for corneal abrasions.[5,6,7] A meta-analysis of five randomized controlled trials (RCTs) failed to reveal an increase in healing rate or improvement on a pain scale.[7] Two subsequent RCTs (one in children, one in adults) reported similar results.[5,6] In the past, patching was thought to reduce pain by reducing blinking and decreasing eyelid-induced trauma to the damaged cornea. However, the patch itself was the main cause of pain in 48 percent of patients.[8] Children with patches had greater difficulty walking than those without patches.[5] Furthermore, patching can result in decreased oxygen delivery, increased moisture, and a higher chance of infection. Thus, patching may actually retard the healing process. [9,10]

This study is limited by the small numbers. However a larger cohort with longer follow up is required to confirm the above findings.

CONCLUSION

Treating simple corneal abrasion with a pad neither improves healing rate nor pain and discomfort of the patient.

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