

Perioperative eye protection under general anesthesia

Sir,

I read with interest the article “Comprehensive eye care: A simple step toward a better outcome” by Hariharan.^[1] Patients undergoing prolonged non-ocular surgery under general anesthesia may develop ophthalmic complications. Corneal abrasion is the commonest injury with an incidence of 44% in unprotected eyes.^[2,3] Abolition of the protective corneal reflex, decreased basal tear production, and absence of pain perception are the causative contributory factors.^[2]

During general anesthesia, eyes need protection either by tape or ointment to avoid corneal injuries.^[4] Several approaches have been used to ensure that the eyelids remain closed, such as passive closure, hypoallergenic tape, eye patches, saline-soaked pads, and suturing. Cucchiara and Black^[5] also suggest taping the eye immediately after induction of anesthesia and leaving the eyes taped till the end of the procedure and considered the use of ointment optional.

For surgeries on the face such as cleft lip, we use transparent film dressing (Tegaderm™, 3M, Bangalore, India) to protect the eyes from cleaning solutions. It is transparent, waterproof, and has a hypoallergenic adhesive that gently adheres to the skin and provides a barrier to external contaminants. For ease of application, we cut the film into two horizontal halves and place the cut halves on each eye with the cut portion on the cheeks before removing the frame of the film.

Ocular lubricants should be placed in the conjunctival sac. Overenthusiastic or incorrect application of the ointment on the eyelashes may lead to inadvertent depilation when the ointment has dried. Another cause is taping the eyes

shut by sticking tape which can adhere to the eyelashes and result in depilation on removal of the tape. The sticking tape should be placed on the skin overlying the tarsal plate. Placement of padding over the closed eyes is useful. It is common practice to use an antibiotic ointment in lieu of artificial tear gel or ocular lubricant. Availability and use of lubricating methylcellulose eye gel drops should be encouraged.

There are mixed reports in the literature regarding recommendation for use of gel, ointment, or eye drops to moisten eyes during anesthesia. While Schmidt and Boggild-Madsen^[6] reported no difference between methylcellulose and paraffin-based ointment, others found methylcellulose 4% to provide better eye protection.^[2] Manecke *et al.*^[7] reported a high incidence of eyelid edema, conjunctival hyperemia, and blurred vision in the paraffin (lipid-based) eye lubricant when compared with a methylcellulose (water-based) eye lubricant and postulated that the inhalational anesthetic was concentrated in the lipid-based paraffin and irritating the eye. Kocatürk *et al.*^[4] found hypoallergenic adhesive tape, antibiotic ointment, artificial tear liquid gel, and ocular lubricant to be equally efficacious for perioperative eye protection under anesthesia in the prone position. White and Crosse^[8] do not recommend the routine instillation of aqueous solutions, viscous gels, or ointments, because they do not offer sufficient additional protection against development of corneal abrasions, and ointments in particular contributed to significant ocular morbidity.

Eye damage under anesthesia is a preventable complication. Emphasis on correct training of the concerned caregivers with regard to eye protection methods will go a long way in decreasing serious ocular morbidity under general anesthesia.

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