



When Operating on the Brain Eyes Matter

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Eye protection during general anesthesia is essential to perioperative patient safety, especially in neurosurgery, where various head positions are used. Manual closure of the eyelids, taping them to keep them shut, ointments, goggles, soft contact lenses, and protective corneal shells are some methods tested and recommended for the protection of eyes in the perioperative period. Despite of these measures, the risks involved are eyelid bruising and edema owing to thinner skin on eyelids, poor barrier function, and poor surface lipids in the stratum corneum.¹ While rare, the most concerning and frequently cited eye injuries include corneal abrasion and blindness. Tegaderm (3M, St Paul, Minnesota, United States), a hypoallergenic latex-free adhesive with 0.03% incidence of ocular injuries by Anderson et al,² is commonly used to cover eyes in our institute.

In a prospective, randomized, controlled study conducted by Drzymalski et al, comparing Tegaderm and EyeGard, a 77% incidence of mild eyelid erythema was noted on the application of Tegaderm.³ Various other medical adhesives are studied and reported to have eyelid trauma. Traces of acrylic monomer found in adhesives can cause cutaneous reactions. A detailed history of allergies or nonallergic irritant dermatitis with medical adhesive is key for prevention. Patch testing can be used in patients with a known allergy or irritant contact dermatitis history.⁴ These reactions can be because of dysfunction of epidermal integrin leading to worse eye injuries as described by Drzymalski et al.⁵

We want to emphasize that even with the most hypoallergenic materials available, some patients might develop intense allergic reactions. Future studies are needed to understand better dermatological reactions of various surgical tapes commonly used to cover eyes during general anesthesia so that providers can choose the best suitable

option. More innovation is required to find the best suitable option for eye protection during general anesthesia.

How to do patch test for adhesives: For the patch test, a 2 × 2 cm piece of adhesive is stuck on the clean skin on the patient's upper back. It is kept there for at least 48 hours.

Learning Points

1. A proper history is obtained regarding the history of allergies, contact dermatitis, etc.
2. The patch test for the surgical adhesives should be included in preoperative preparations.

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Conflict of Interest

None declared.

References

- 1 Tagami H. Location-related differences in structure and function of the stratum corneum with special emphasis on those of the facial skin. *Int J Cosmet Sci* 2008;30(06):413–434
- 2 Anderson DA, Braun TW, Herlich A. Eye injury during general anesthesia for oral and maxillofacial surgery: etiology and prevention. *J Oral Maxillofac Surg* 1995;53(03):321–324
- 3 Drzymalski DM, Ward K, Hernandez JM, et al. The effect of Tegaderm™ versus EyeGard® on eyelid erythema during general anesthesia: a randomized-controlled trial. *Can J Anaesth* 2020;67(05):560–567English.
- 4 Habif TP. Contact dermatitis and patch testing. In: Habif TP, ed. *Clinical Dermatology*. 5th ed. Philadelphia, PA: Elsevier; 2010:130–153
- 5 Drzymalski DM, Arkoff H, Azocar RJ. Eyelid injury after use of 3M Durapore™ tape during general anesthesia. *Can J Anaesth* 2018; 65(11):1273–1274

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