Medical adhesive-related skin injuries caused by taping of the eye using acrylic-based adhesive tapes in prone surgery: A case report

Medical adhesive-related skin injuries (MARI) is a newly coined term, defined as ‘an occurrence in which erythema and/or other manifestations of cutaneous abnormality (including, but not limited to, vesicle, bulla, erosion or tear) persists 30 min or more after removal of the adhesive’.[1] MARI has been classified as mechanical (caused by shear force while removing tape), dermatitis (allergic or non-allergic) and others (maceration or folliculitis). A PubMed search with the keywords ‘marsi anaesthesia’ yielded just two case reports.[2,3] We report the occurrence of MARI due to taping of eyes with an acrylic-based adhesive in an elderly female who underwent lumbar spine surgery in the prone position.

A 67 years old female was taken up for laminectomy at L4–L5 level. She was a known case of hypertension for the last 5 years presently on oral amlodipine 10 mg q 24 h. After shifting the patient to the operation theatre, standard American Society of Anesthesiologists monitors were attached and induction of anaesthesia was done. Her eyes were taped with Durapore (3M, United States) and the patient was turned prone, with head supported in a prone pillow (TruLife Oasis Elite Prone Head Rest; Universal medical, US). The patient remained normothermic intraoperatively and her haemodynamic parameters remained within normal limits. The total duration of surgery was 2 h. She was turned supine at the end of the procedure. Upon removing the Durapore® tape covering the inferior margin of the right eye of the patient, around 4 cm long strip of skin got peeled off with the tape and the wound started to bleed [Figure 1]. After applying compression for 5 min, the bleeding stopped and the wound was cleaned with saline. Thereafter, an antibacterial ointment was applied over the wound and a non-adhesive foam dressing was done. The patient was extubated and wheeled out to the post-anaesthesia care unit (PACU). Thereafter, we explained the patient and her attendants regarding the wound. The wound healed by primary intention over 5 days.

Taping the eyelids closed prevents corneal abrasions. However, the skin over the face and especially eyelids is thin and hence more predisposed to MARI.

Figure 1: Injury below eye caused due to acrylic eye tape
Skin injury occurs when the skin-to-tape adhesion is stronger than adhesive forces between the skin cells and skin layers so that they separate when the tape is peeled off. The factors that predispose to the occurrence of MARSI include intrinsic patient factors like extremes of age, malnutrition, diabetes, dehydration etc., and extrinsic factors like dry skin, certain medications, radiation exposure, improper choice of tape and repeated taping. Our patient was an elderly female who underwent surgery in the prone position, both of which are risk factors for the development of MARSI. The type of medical adhesive tape used is also an important consideration and it has been suggested that newer silicone-based medical adhesive tapes are better than the traditionally used acrylic-based medical tapes. Also, it has been suggested that one should separate the tape from the skin with a gentle force, remove the adhesive product at a low angle and slowly back over itself in the direction of hair growth, keeping it horizontal and close to the skin surface.

Kim et al. reported MARSI occurring in an 87 years old female due to a surgical tape which was covering the BIS probe. Nam et al. have described anaesthetic management of a patient with the previous history of MARSI. Sindwani et al. had also recently described skin injury due to acrylate-based adhesive tape. The aim of reporting this incident is to sensitize the readers about the possibility of occurrence of MARSI in their clinical practice. MARSI remains a neglected topic in anaesthesia circles, though it can have a substantial impact on patient care.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

REFERENCES
1. McNichol L, Lund C, Rosen T, Gray M. Medical adhesives and patient safety: State of the science: Consensus statements for the assessment, prevention, and treatment of adhesive-related skin injuries. J Wound Ostomy Continence Nurs 2013;40:365-80.
2. Kim TH, Lee JS, Ahn JH, Kim CH, Yoon JU, Kim EJ. Medical adhesive related skin injury after dental surgery. J Dent Anesth Pain Med 2018;18:305-8.
3. Nam J, Earle R, Vaghadia H. Anesthetic challenges posed by generalised medical adhesive related skin injury (MARSI). J Clin Anesth 2018;49:12-3.
4. Edgcombe H, Carter K, Yarrow S. Anaesthesia in the prone position, Br J Anaesth 2008;100:165-83.
5. Zeng LA, Lie SA, Chong SY. Comparison of medical adhesive tapes in patients at risk of facial skin trauma under anesthesia. Anesthesiol Res Pract 2016:4878246.
6. LaVelle BE. Reducing the risk of skin trauma related to medical adhesives. Manag Infect Control 2004;182:1289-94.
7. Sindwani G, Suri A, Verma R. Facial skin injury caused by acrylate-based adhesive tapes in a post-menopausal patient: A preventable cause. Indian J Anaesth 2017;61:446-7.

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