Patient Eye Protection during General Anesthesia

The Risks of Taping

Sharn Anesthesia, October 2013 - Though rare, corneal abrasions remain the most frequent ocular complication after General Anesthesia and have been known to occur during MAC and Regional cases as well.[i] They are costly to treat and very painful for the patient. To help prevent corneal abrasions anesthesia providers often secure the eyelid in the closed position. This is simple and provides the added benefit of protecting the eye from unintended exposure to fluids and airborne contaminants.

There are a variety of techniques and products available for this purpose. Key factors to consider include ease of use, efficacy in obtaining a good seal, minimizing risk of infection, the ability to assess the eye, and the condition of the surrounding skin.

Some providers choose to use wound dressings which are gentle on the skin and may provide a fluid resistant barrier. However, the inherently high cost and difficulty in applying them to the eye are prohibitive to many.

Surgical tape is the more widely used product and likely the riskiest. It has the advantage of being cheap and ubiquitous in the OR; but the few pence saved add a number of patient safety concerns including skin tears, bruising, and increased risk of HAI's due to cross contamination.

Is taping eyelids putting your patients at risk?

Risk of Infection

With increased focus on reducing HAI's, one cannot ignore the growing body of evidence related to contaminated rolls of tape. As far back as 1974 Berkowitz et al document medical adhesive products as a source of potential infection.[ii] In 1999 Redelmeirer and Livesley suggest that in General Surgery up to 74% of the partially used tape rolls could be colonized by pathogenic bacteria,[iii] and more recently a 2010 independent lab study revealed that MRSA and/or VRE were found on over 50% of 21 rolls tested with at least three rolls testing positive for both.[iv]

The sources of contamination include clinician's pockets, drawers, IV poles, and counter tops.[v] The Department of Health and Human Services actually points out in CFR 42 Parts 405m, 410 413 et al that *rolls of tape cannot be decontaminated and can serve as a source of contamination for both facility personnel and patients.*[vi]

To reduce HAI's we have rigorous hand washing protocols and invest in numerous disposable products yet there are very few, if any, formal practices in existence to address contamination risks from tape. There are however options for our patient's eyes.

Risk of Trauma

Use of surgical tape, and its side effects, is so common that medical adhesive-related skin injury (MARSI) is often unreported but estimated to affect 1.5 million patients annually.[vii] A 2006 Patient Safety Advisory issued by the Pennsylvania Patient Safety Reporting System cites the following example of a tape related injury: *Patient eyes taped shut in OR for protection. Tape was removed in OR. In PACU, staff noticed bilateral eyelids had superficial skin tears.*[viii] Bruising, reddening and loss of eyelashes are also common and though relatively minor certainly affect overall patient satisfaction.

Obviously patients with fragile skin are at greater risk. Many factors affect skin, some are obvious and easy to spot such as age, dehydration, pre-existing dermatitis. Others are not so easily recognized such as medication side effects, poor nutrition, cosmetic chemical peels or overuse of cosmetic skin products such as alpha hydroxyl acid (AHA), auto-immune conditions, and repeated taping. One severe case of contact dermatitis involved a 33 year old patient who received a peel 6 months prior to surgery which was not revealed during the initial patient pre-op history.[ix]

Reducing the Risks

An affordable and cleaner alternative to consider are oval shaped, translucent eye patches. (EyeGard, Sharn Inc, Tampa FL) They are made of a lightweight, breathable material which provides a moisture resistant barrier as well as a good seal. The oval shape facilitates easy application to the contoured orbital region and a non-adhesive tab makes lifting for repositioning or removal easy even while gloved. The adhesive is gentler than common surgical tapes thus reducing the risk of insult to the skin. The patches are packaged in a protective dispenser, so they are able to be kept clean until ready to be used.

Take Steps to Reduce the Risk to Patients

With the increase of at risk patients and reduced tolerance of HAIs, a better method is needed to seal the patients' eyelids. Designed for this purpose, EyeGard provides the most comprehensive way to protect patient's eyes and raise the standard of care for general surgery patients. For more information visit http://www.pentlandmedical.co.uk or contact Pentland Medical Ltd on 0131 467 5764. Eyegard literature is endorsed by the AfPP. AfPP recommendations clearly state that tape should not be used for patient eye protection. The Eyegard range is established as the world's leading product in patient eye care during anaesthesia.

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[i] Anson Jonathan, "Perioperative Corneal Abrasions: Etiology, Prevention and Management" Pennsylvania Society of Anesthesiologists, Clinical Update

[ii] Berkowitz DM, Lee WS, Pazin GJ, et al. Adhesive tape: potential source of nosocomial bacteria. *Appl Microbiol.* 1974; 28 (4): 651-654.

[III] Redelmeirer,DA and Livesley, NJ; "Adhesive Tape and Intravascular-Catheter Associated Infections: Journal of General Intern Med. Vol. 14 – Issue 6 pp 373-375, 1999.

[iv] Clinical and Laboratory Standards Institute. Performance standards for antimicrobial susceptibility testing; twentieth informational supplement. CLSI document M100-S20. Wayne, Pa: CLSI, 2010.

[v] Lavelle BE. Reducing the Risk of Skin Trauma Related to Medical Adhesives. Managing Infection Control, June 2004.

[vi] US Federal Register, Part II, 42 CFR Parts 405m 410, 413 et al, Medicare and Medicaid Programs, Conditions for Coverage for End-Stage Renal Disease Facilities, Final Rule.

[vii] Konya, etal. J of Clin Nursing 2010;19:1236-42

[viii] PA-PSRS Patient Safety Advisory, Vol. 3, No. 3 – Sept. 2006

[ix] TY Chuang, MD; Allen H. L. Li, MD; M.W. Yang, MD; Peter C.H. Chung, MD; P.W. Lui, MD. Chang Gung "Inadvertent Eyelid Irritant Contact Dermatitis from Hypoallergenic Surgical Tape." Med J Vol. 29 No. 4 (Suppl) September 2006.