

Patient Eye Protection under General Anesthesia

Michael D. Sparkuhl, MD, FACS

Department of Surgery

Mark DeSanti, MD

Department of Anesthesia

Community Memorial Health System

Ventura, California

Abstract

Background:

Patient eye and face injury under supine general anesthesia is an infrequent event with potential medical and legal consequences. The eyes and face are at risk of injury when surgical drapes obscure their view and protection by the anesthesiologist. This is particularly true in da Vinci, laparoscopic cholecystectomy, other laparoscopic procedures, breast, and beach chair shoulder surgery. Medical literature emphasizes full eye and face protection in da Vinci and other procedures, though traditional methods lack consistency.

Methods:

An institutional database of all adverse surgical events was reviewed to cull out eye and face injuries. A specially designed patient protective eye shield was used to protect the eyes and surrounding areas. It was evaluated on a variety surgical cases with the patient under supine (face up) general anesthesia.

Results:

The database comprised 1330 entries of adverse operating room events over 4 years. There were 12 events related to eye and face injuries (0.90%) independent of 20 anesthesia related eye and ET tube skin-tape and tooth injuries. There was no permanent visual loss. 20 anesthesiologists used and evaluated the full eye area protection device in 99 cases. 97% rated it better or superior to traditional methods and 99% indicated it enhanced their sense of security with the eyes and face being well protected.

Conclusions:

Eye and face injuries under supine general anesthesia are infrequent and typically involve the eyes, surrounding skin and soft tissue, and teeth. A single database review indicated a 0.90% injury incidence, though extracting comprehensive information from large reporting agencies is confounded by reporting practices and entry techniques. A full eye patient protective device used by a 20 physician anesthesia department found it to be a useful and worthwhile addition to intraoperative patient safety.

Selected Readings - da Vinci Eye and Face Protection

BJA: CEACCP April 2006, Volume 6, issue 2, Pages 67-70. Shruti Contractor, et. al. Injury during Anesthesia.

Key points.....Ocular Injury occurs during 0.1% (1:1000) of general surgery anesthetics. Blindness occurs following 1 in 125,000 (0.0008%) of general anesthetics.

J Anaesthesiology Clin Pharmacol. 2012 Jan-Mar: 28(1): 11-16. doi. 10.4103/0970-9185.92427 Perioperative vision loss: A complication to watch out.

Prevention.....the anesthesiologist must avoid compression of the globe....If surgery is near the face, the surgeon's arm must not be allowed to rest on the patient's eyes.

Anesthesiology, V 122. No 5 1 May, 2015 Ajay Sampat, MD, Et. Al Corneal Abrasion in Hysterectomy and Prostatectomy Role of Laparoscopic and Robotic Assistance.

..... etiologies of perioperative CA (Corneal Abrasion) include exposure, reduced corneal hydration and chemical or direct mechanical trauma.

British Journal of Anaesthesia 93 (6): 859-64 (2004) Advance Access publication September 17, 2004

Operating positions and conduct.....insist on a constant view of the patient's face.

Contemporary OB/GYN Robotics in Practice: New angles on safer positioning. October, 2012 Ali Ghomi, MD. Facial Trauma and Corneal Abrasion.

A patient's face....injury during robotic surgery....the robotic camera system....contact with a patient's face causing facial and ocular trauma.

Advances in Anesthesia 30 (2012) 75-96 Elsevier Mosby Anesthetic Considerations for Robotic Surgery in the Steep Trendelenburg Position. Alain F Kalmar, et. al.

Postinduction:

Fig 2 ...avoid injury to the face.

....padding to protect the face from the robotic arms' movements and instruments.

The face is invisible and difficult to recognize once the sterile drapes have covered the entire patient

....protect the face against excursions of the robotic arm.