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More about Protection of Endotracheal Tubes during Laser Microlaryngeal Surgery

To the Editor:—Much has now been written about anesthesia for laser microlaryngeal surgery. One of the main subjects of interest is how to protect the endotracheal tube, failure of which results in tube perforation and/or combustion.^{1,2}

When we reviewed the past literature, it surprised us to find that although protection of the cuff balloon of the endotracheal tube has been mentioned by most of the authors, few have mentioned the incidence of cuff perforation by the laser beam.² This is a real complication and should be emphasized so as to alert people giving anesthesia for laser surgery in the larynx. While protecting the red rubber endotracheal tube with aluminum foil wrapping up to the cuff balloon and protecting the cuff with wet cottonoids, we have not had a tube perforation in recent years, but on several occasions had to change tubes because of cuff perforation.

The cottonoids afford good protection to the balloon only when adequately moistened, so that the heat generated by the laser beam can be dissipated by vaporization. Continuous insult from the laser beam may dry up the cottonoids which then lose their protective properties. Further hits by the laser then cause combustion of the cottonoids and/or the cuff. Drying of cottonoids can conceivably happen around tissues being burned by the laser beam since tubes have been shown to burn in the vicinity of the laser, especially when combustible

gases were in use.² We are currently conducting experiments on the degree of protection of endotracheal tubes by wet and dry cottonoids.

In the event where bleeding is moderate, the cottonoids may become stained such that they may be mistaken by unwary surgeons to be papillomata. It is therefore important to remove blood-stained cottonoids and to irrigate the field periodically.

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CSF and Plasma Morphine after Epidural and Intrathecal Application

To the Editor:—Little is known about morphine concentration and rate and route of removal of the drug from the cerebrospinal fluid (CSF) following the administration of epidural or intrathecal morphine. Hence, it is unknown whether the potential risk of delayed respiratory depression is equally high after epidural or intrathecal opiate injection. A few reports¹⁻³ suggest that a cephalad spread occurs after intrathecal narcotics, since delayed respiratory depression has been observed after morphine doses ranging from 1-15 mg.¹⁻⁴

In order to clarify the relationship between morphine dosage, route of administration, duration of analgesia, and morphine levels in the cerebrospinal fluid we evaluated simultaneous morphine concentrations in plasma

and CSF after epidural or intrathecal morphine, respectively, for postoperative analgesia.

Six patients (ages ranging from 37 to 72 years) undergoing elective surgery under general anesthesia consented to the procedure and the protocol for the study was approved by the Departments of Anaesthesia and Surgery. No patients received any form of narcotic analgetics within 48 hours prior to surgery, nor were any narcotics given intraoperatively. After conclusion of surgery, but before termination of anesthesia, two patients received 4 mg morphine and two patients 8 mg morphine, epidurally, and two patients received 1 mg morphine, intrathecally.

Plasma and CSF samples were drawn 2 and 10 min