CURRENT COMMENT AND CASE REPORTS

CURRENT COMMENT is a section in ANESTHESIOLOGY in which will appear invited and unsolicited professional and scientific correspondence, abbreviated reports of interesting cases, material of interest to anesthesiologists reprinted from varied sources, brief descriptions of apparatus and appliances, technical suggestions, and short citations of experiences with drugs and methods in anesthesiology. Contributions are urgently solicited. Editorial discretion is reserved in selecting and preparing those published. The author's name or initials will appear with all items included.

PROLONGED POSTOPERATIVE USE OF AN ENDOTRACHEAL TUBE: REPORT OF A CASE

Since the first World War, endotracheal anesthesia has become more and more popular in certain types of surgery, particularly as improvements have been advanced for its methods and use. In maxillofacial surgery, especially if the procedure is extensive, anesthesia by the endotracheal route is practically a necessity. It was widely used during World War II, and is the method of choice by most anesthesiologists and plastic surgeons for operations about the face and neck.

Although the literature contains many references to various methods, technics and uses of endotracheal anesthesia, little is said about the necessity for continuous intubation during the postoperative period. There is no discussion of the results of the prolonged use of an endotracheal tube. Thornton and Rowbotham (1) stated that in patients who have suffered severe damage to the lower jaw or tongue, it may be advisable to leave the tube in place until they have regained consciousness. They also imply that the tube may have to be replaced and retained for some time. Further, there is no evidence to suggest a time limit during which a tube can be left in the trachea. MacEwen (2) has made the statement that an individual soon develops a tolerance to the presence of a tube in his glottis and experiences little discomfort from it. He is also of the opinion that there are good reasons "for preferring tubes when there are effusions of blood or serum or collections of pus into or about submucous laryngeal tissue or when anything overhangs or threatens to occlude the laryngeal orifice." Gillespie (3) has reported on the use of an endotracheal tube left in situ for approximately fifty-one hours with no permanent damage. Foregger (4) recently cited a case in which an endotracheal tube was left in the trachea for 138½ hours, and questioned whether or not a human larynx may be intubated for long periods of time without damage to the larynx and vocal cords if they were not previously paralyzed by an injury.

Since we have found no mention of an endotracheal tube having been left in place in the normal functioning human larynx for any extended period after operation, we feel that the following report will be of interest.

A 69-year-old, white, obese woman was admitted to the University of Kansas Hospital, on March 3, 1946, because of a squamous cell carcinoma involving the mandible, salivary gland tissue and surrounding lymph nodes. She had received radium treatment for a lesion on her lower lip three years before admission.

Her general physical condition was good. The blood pressure was 135 mm. systolic and 80 mm. diastolic. The pulse was 88 and regular. Leukocytes numbered 5,400 and the hemoglobin was 74 per cent.

On March 4, one hour before coming to surgery, the patient was given preoperative medication of delvinal sodium 1½

grains by mouth, morphine sulphate, 1/6 grain, and atropine sulfate, 1/150 grain intramuscularly. The anesthetic agent was started at 11:17 a.m.; cyclopropane and ether were used for induction. A number 6 endotracheal tube was introduced into the larynx without difficulty by direct vision. Vaseline gauze strips were used as a packing around the tube in the pharynx. Physiologic saline solution was given intravenously and the operation was begun at 11:31 a.m. The submandibular area was dissected, the sublingual and submaxillary glands were removed, the mental portion of the mandible was removed and wire was used to join the two fragments. The patient received 500 cc. of whole blood during the operation. The pulse remained between 70 and 80, and respirations were normal throughout the procedure. The blood pressure varied between 120 and 150 mm. systolic and 70 and 80 mm. diastolic. The operation ended at 1:04 p.m. The pharyngeal pack was removed, the pharynx aspirated, the endotracheal tube removed and a mental airway inserted. Her tongue had to be held forward to permit proper respiratory exchange, her color was good and her condition considered fair as she left the surgery.

Less than two hours after the patient was returned to her room, her respirations became more labored and she became cyanotic. She was brought back to the operating room where a bronchoscopy was done; blood and mucus were removed from the trachea and bronchi. An endotracheal tube was again inserted because of labored breathing, and she was returned to her room. Frequent suction of the tube was employed by means of a catheter passed through the endotracheal tube, and continuous oxygen was given through the tube.

At 9:00 a.m. on the following morning, March 5, the tube was again removed. Continuous suction was used and oxygen was given by nasal tube. Respirations were labored, and after about twenty minutes the patient became cyanotic and her radial pulse imperceptible. She was returned to surgery and bronchoscopic suction was done and the tube replaced.

At 10:45 a.m. on March 6, the tube was removed and suction was used. For a while after returning to her room the patient had some difficulty in breathing, but with frequent suction, continuous oxygen and a high back rest, she finally became comfortable. At 8:30 p.m. that night, a considerable amount of mucus developed which suction did not relieve. She became more uncomfortable and moribund. She was taken to the operating room; bronchoscopy was attempted but failed owing to the edema of the base of the tongue and epiglottis. An endotracheal tube was inserted blindly after several attempts.

During the next four days, the patient was brought to surgery once daily for the purpose of removing the endotracheal tube and inserting another. On March 8, it was noted that the edema had subsided markedly. On that day there was a necrotic and foul smelling material on the tube and in its lumen when it was removed. With frequent suction of the tube and continuous oxygen, the patient's color and respirations remained fairly normal. On March 9, it was observed that there was a small ulcerated area on the posterior pharynx.

At 10:30 a.m. on March 11, the tube was removed and not replaced. The patient was put on a high back rest, continuous oxygen and frequent suction. She had periods of cyanosis and difficulty in breathing for several days, but they were never severe enough to require intubation. The upright position was maintained for several days, then she gradually became accustomed to sleeping in the usual manner without respiratory embarrassment.

Administration of penicillin was begun immediately after operation and she received 20,000 units every three hours. She was given amino acids and 10 per cent glucose solution intravenously daily. She had some rales in her right chest for a week after operation, but her temperature never went above 100 F.

On March 12, the patient began to take some fluid by mouth, and during the last four days of her hospital stay she was able to maintain a fairly satisfactory fluid intake. She was discharged on the fourteenth postoperative day with a good immediate prognosis, but poor ultimate prognosis because of further extension of

malignant disease into the mandible. At the time of discharge the ulcerated area on the pharynx was healed.

An endotracheal tube was in place in this case for approximately seven days, with the exception of ten hours on the second postoperative day, making a total of one hundred and fifty-eight hours.

Though there was some reaction around the tube in the trachea, this produced no unusual pulmonary symptoms, and tended to subside as the edema of the tongue and epiglottis disappeared. Laryngoscopy upon dismissal from the hospital showed the vocal cords to be undamaged and the pharyngeal ulcerations healed.

Since some method of insuring respiratory exchange had to be employed in this patient, the continuous use of an endotracheal tube was chosen rather than tracheotomy. The results were entirely satisfactory.

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PENTOTHAL–SODIUM REQUIREMENT IN MAN: REPORT OF CASE

A recent article (1), with its graph plotting pentothal dosage and time relations, brought to mind a case in my old records. A patient in an Evacuation Hospital in Assam, India, was anesthetized intermittently sixteen times with pentothal and seven times with gas-oxygen-ether anesthetics between December 13, 1944, and March 5, 1945. The subject was a slender, 24-year-old, white, American soldier with extensive burns of both lower extremities, buttocks and right hand (infected with B. pyocyaneus). He ran a febrile course (99.6 to 102 F) from December 10, 1944, to about February 10, 1945. The erythrocyte count was 3,800,000 on December 13, 3,250,000, on February 9, and 4,010,000, on February 28. He received five transfusions of 500 cc. each, of citrated blood between December 13 and January 21. Anorexia and resultant poor nutrition along with serum leakage produced dependent edema during the five days from January 3 to January 8, which was gradually alleviated by the administration of 1000 cc. of human plasma on January 5. Padgett dermatome grafts were applied to the infected areas under gas-oxygen-ether anesthesia on January 24 and again on February 8. Aside from the two dermatome grafts already mentioned, the only other procedure requiring anesthesia was change of dressings, scrubbing of the granulation tissues with tincture of green soap and a hand-brush at frequent intervals, and occasionally applications of a 2 per cent acetic acid dressing.

Thus, the stimulus and the requirement for dulling pain through the medium of pentothal were constant; only the duration of stimulus was variable. The same anesthetist gave all but two of the sixteen anesthesias with pentothal, of which one of the latter can be discarded because of an extra-vascular injection and incomplete result. The duration of anesthesia was not recorded on two more occasions. There were, therefore, thirteen administrations of pentothal with a record of time and dosage by which the patient was anesthetized to the same degree and end-point in a period of ninety-three days. The premedicants