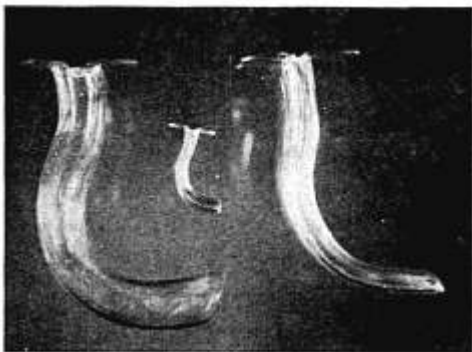


The ordinary pharyngeal airways are being manufactured of plastic in all sizes, ranging from the infant to the large male type.

The intubating airway is similar in length and shape to the ordinary Guedel airway with the difference that it is made of plastic and its lumen is circular, admitting tubes up to size 38 French.



The technic of intubating is similar to that used in the blind nasal method. The endotracheal tube is inserted into the airway to its tip and the airway is then inserted into the mouth. The left hand tilts the flange of the airway back and forth while the right hand holds the outer end of the tube close to the ear, listening for the point of maximum intensity of respiration. At the point of maximum inspiration the tube is slipped into the trachea

with a thrust. The tube and airway are easily anchored to the face with adhesive.

The intubating airway has been successfully used in over 100 cases and has often succeeded where direct laryngoscopy was difficult or had failed. It has proved successful when patients had to be intubated who were in the lateral or prone position during operation. It can be inserted in

comatose patients and their tracheas can be cleared of mucus easily with a tracheal suction catheter. The many advantages of these airways are a definite aid to the anesthesiologist.

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SEVERE HEMORRHAGE WITH ASSOCIATED TRANSFUSION REACTION: REPORT OF CASE *

A man, age 25 years, gave a history of shrapnel injury in November 1944 while

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in France. At that time he received wounds of the head, face, back and right chest and was unconscious for about twelve days. A tracheotomy and partial removal of the right mandible were performed shortly after injury. In 1945 scar tissue was removed from the face and a bone graft placed in the mandible. There

was a history of malaria. In addition, he complained of a productive cough, occasional mild hemoptysis and failed to regain the weight he had prior to injury.

Examination prior to operation at this hospital revealed moderate clubbing of the fingers and about 25 per cent limitation of motion of the mandible. The vital capacity was 96 per cent. The blood pressure was 94 mm. systolic and 60 mm. diastolic. Roentgenograms revealed a small foreign body, about 1 cm. in diameter, in the right lower lobe. The erythrocyte count was 4,530,000 per cubic millimeter and the hemoglobin was 13.5 Gm. per 100 cc. The bleeding time was three and a half minutes and the clotting time was four minutes. The urine was normal. The Wassermann reaction was negative. The blood type was A and it was Rh positive.

On April 14, 1948, he was scheduled for removal of the foreign body in the chest and drainage of a small abscess surrounding the foreign body. Premedication consisted of nembutal, $1\frac{1}{2}$ grain (0.097 Gm.), orally at 7:30 a.m. and morphine sulfate, $1/6$ grain (0.011 Gm.) and atropine, $1/75$ grain (0.86 mg.) subcutaneously at 8 a.m. At 9:50 a.m. anesthesia was induced by giving morphine sulfate, $1/6$ grain (0.011 Gm.), nembutal, $5\frac{1}{4}$ grain (0.341 Gm.), curare 160 units, and pentothal 150 mg., all intravenously and in that sequence. Orotracheal intubation, after cocaineization, was performed without difficulty. Nitrous oxide in a concentration of 70 per cent was given for maintenance of anesthesia and no additional medication was given except as noted below. At 10:15 a.m. operation was begun with the patient in the lateral position and the primary operative procedure was completed at 12:00 p.m. During this period of one hour and forty-five minutes there were two episodes of bronchospasm as manifested by moderate difficulty in expanding the lungs. Cyanosis did not occur. The first episode, at 10:55 a.m., was treated by giving 50 units of curare and minimal amounts of ether; the second, occurring at 11:25 a.m., by administration of atropine $1/100$ grain and ether. Until 11:30 a.m. the blood pressure ranged from 80 to 120 mm. systolic and 56 to 90 mm. diastolic (initially 94 mm. systolic and 58 mm. diastolic) and

the pulse rate from 72 to 110. However, at 11:45 a.m., or about twenty minutes following the administration of atropine, the pulse rate rose to 130. During the operation very little blood was lost and 1 pint of citrated blood was considered adequate for replacement therapy. During closure, however, it was noted that considerable blood was oozing from the chest wall. This was noted at 11:30 a.m. or about the time the atropine was given. The pulse rate at 11:45 a.m. was 130 and the blood pressure was 102 mm. systolic and 80 mm. diastolic. Endotracheal suction was carried out but extubation was not done because at 11:55 a.m. the blood pressure suddenly was not obtainable and the radial pulse was not palpable. Procaine, 100 mg. in a single dose of a 1 per cent solution, and ephedrine, 75 mg. in divided doses, were given intravenously. At 12:05 the pulse was 130 to 140 and the systolic pressure was approximately 64 mm. of mercury. A second pint of blood was then given without any significant sustained change in blood pressure or pulse rate. Because of evidence of hemorrhage, the chest was reopened at 1:20 p.m., at which time considerable unclotted blood was found in the thoracic cage as a result of generalized oozing from denuded areas. Gelfoam was applied. During this procedure, which was completed at 2:10 p.m., anesthesia consisted of nitrous oxide in concentration of 50 per cent or less. At the end of this procedure, the patient had received 3500 cc. of blood and was considered to have a positive balance of 1500 cc. The blood pressure had ranged from 80 to 60 mm. systolic and from 50 to 40 mm. diastolic, and the pulse rate from 130 to 150.

Shock persisted after the second thoracotomy. It was thought that the patient was probably in irreversible secondary shock although the skin was generally warm and dry. A variable degree of pallor was evident. The blood pressure reached a low of 40 mm. systolic and 20 mm. diastolic from 4:30 to 6 p.m. At this time, unclotted blood was drained in copious amounts from the chest tube. Tracheal suction was bloody and catheterized urine was also bloody. Additional blood resulted in temporary improvement

in blood pressure and pulse rate. Supportive measures, carried out through consultation with the Section of Internal Medicine, included eschatin, 50 per cent glucose, leg wrappings, snake venom, calcium gluconate, vitamin K, liver extract, vitamins B and C, and finally digitalization at 10 p.m. The prothrombin time, by the one stage method, was determined to be 28 per cent at 7 p.m.

At midnight a third thoractomy was performed. Oxycel was sutured to the oozing surfaces and the hemorrhage was thus controlled. Anesthesia consisted of oxygen and intermittent nitrous oxide. This final procedure was completed at 1:25 a.m. on April 15. Following this, the blood pressure rose to 84 mm. systolic and 64 mm. diastolic and the pulse declined to 120. The patient was extubated; he reacted well and his color was good when he was returned to the ward.

The patient was on the operating table for a total of seventeen hours. During this time the endotracheal tube was continuously in place. Respiration during the intervals between the procedures was often controlled or augmented, although part of the time he was capable of sufficient exchange without assistance. During the entire period following the first procedure, a total of $5\frac{1}{2}$ to 6 liters of unclotted blood drained from the chest tube. He received a total of 8160 cc. of blood, 5 units of plasma and 500 cc. of physiological saline solution.

On April 15 the patient was rational and showed no evidence of cerebral damage due to anoxia. The chest was clear and roentgenograms revealed fully expanded lungs. The erythrocyte count was 4,960,000 per cubic millimeter; the hemoglobin 13 Gm. per 100 cc., and leukocyte count 14,700 per cubic millimeter. The blood pressure was 90 mm. systolic and 70 mm. diastolic. The prothrombin time was 24 per cent. The bleeding time was two minutes and the coagulation time eight and a half minutes.

On the morning of April 16 the patient was restless and dyspneic. Coarse rales in the chest were improved temporarily by endotracheal suction of bloody fluid. Roentgenogram revealed pleural effusion

compressing the right lung, but the left lung was aerated. The erythrocyte count was 2,670,000; the hemoglobin $8\frac{1}{2}$ Gm. per 100 cc. and leukocyte count was 6800. About 700 cc. of blood had drained through the de Pezzar catheter in the chest. He received 1920 cc. additional citrated blood. The prothrombin time was 27 per cent. Liver function and colorimetric tests were unsatisfactory because of blood hemolysis. However, the thymol turbidity was 4.4; the urobilinogen reaction was negative and the van den Bergh reaction was negative. The skin revealed increasing evidence of icterus and petechial hemorrhages. The non-protein nitrogen rose to 89 mg. per 100 milliliters. The urine output since operation, including 1 ounce catheterized during operation, amounted only to approximately 185 cc., all of which was blood tinged. The temperature increased to 105 + during the day. Respiratory embarrassment resulting apparently from both intrapulmonic and right intrapleural accumulation of fluid, became increasingly severe. The blood pressure dropped to 60 mm. systolic and 24 mm. diastolic at 6:45 p.m. Cyanosis of the nails persisted in spite of positive pressure oxygen, and the patient died at 7:59 p.m. on April 16.

The most important necropsy findings were in the pulmonary area. The right pleural cavity contained 700 cc. of fluid blood. The right upper and middle lobes were atelectatic. The bronchial tree of the right lower lobe was filled with blood and there was diffuse hemorrhage throughout the pulmonary parenchyma. The left lower lobe was completely consolidated by lobar pneumonia.

The spleen was large (300 Gm.) and showed areas of hemorrhage, congestion, and focal areas of necrosis.

Both kidneys were heavy (left, 210 Gm. and right, 170 Gm.) and the collecting tubules were filled with blood and heme casts. There were scattered areas of necrosis of convoluted tubules.

Other findings included scattered focal hemorrhages, edema and nonspecific focal areas of ulceration in the colon. The adrenal glands showed diffuse hyperemia and small focal hemorrhages, especially in

the cortex. Bone marrow showed pan-hyperplasia with no evidence of dyscrasia.

DIAGNOSIS AT NECROPSY

I. Shock, postoperative and hemorrhagic diathesis with

- (a) Hemothorax, right
 - (1) Atelectasis, upper and middle lobes, right lung
- (b) Intrabronchial and intrapulmonary hemorrhage, lower lobe, right lung

(c) Lower nephron nephrosis, bilateral

(d) Focal areas of necrosis, spleen
(e) Nonspecific ulceration, colon

II. Pneumonia, lobar, lower lobe, left lung.

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VAPOR-PROOF LAMP FOR USE WITH THE HEAD MIRROR IN THE OPERATING ROOM

When the hazard of fire or explosion is likely to exist, portable lamps should be enclosed in a manner approved for explosive atmospheres, in accordance with the National Electrical Code, section 5021.

Commercial portable enclosed lamps emit parallel rays in a beam, and are unsatisfactory for use with the head mirror. A head lamp is a safe alternative to the head mirror if the lamp is operated at a voltage

