

## A SIMPLE METHOD FOR THE INDUCTION OF TOPICAL LARYNGO-TRACHEO-BRONCHIAL ANESTHESIA

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**I**N the past we have performed diagnostic bronchoscopy on a group of paraplegic patients in whom the induction of topical anesthesia in the usual way was difficult. For these patients, a method of applying local anesthesia was developed which was so effective and simple that it has become our preferred technique in the preparation of all adult patients for endoscopy or bronchography. Anesthetization can be done very quickly and effectively. This method has been used approximately 150 times with no major or minor complications.

### METHOD

The patient may be either lying or sitting. A No. 12 or 14 plastic catheter is passed into the trachea by the nasotracheal route in the same way as if nasotracheal suction were to be carried out.<sup>1</sup> No difficulty will be encountered in passing the catheter if it is advanced slowly until the tip lies just above the glottis as judged by the passage of air through the catheter with each respiration. The tip is then quickly passed into the upper trachea when the patient coughs or takes a deep breath (Fig. 1, A). At this time some patients will have paroxysmal coughing so that it is necessary to have the local anesthetic ready for immediate instillation. A syringe is attached to the catheter, and 3 to 5 c.c. of 5 per cent cocaine is injected slowly over a 5-minute period, taking care that the plunger is firmly held (Fig. 1, A) to prevent its expulsion from the syringe barrel. When the first portion of the cocaine is injected, coughing is induced but the cough reflex is rapidly obtunded after the first 1.0 c.c. or so of cocaine has been instilled.

If bronchograms are to be obtained, the catheter is placed in position under fluoroscopy. If bronchoscopy is the objective, the catheter is withdrawn and the bronchoscope can be passed immediately. In either case, the anesthesia is excellent. No additional hypopharyngeal anesthesia is required since the cocaine is coughed up into this area from the trachea during its instillation (Fig. 1, B).

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Received for publication Sept. 18, 1958.

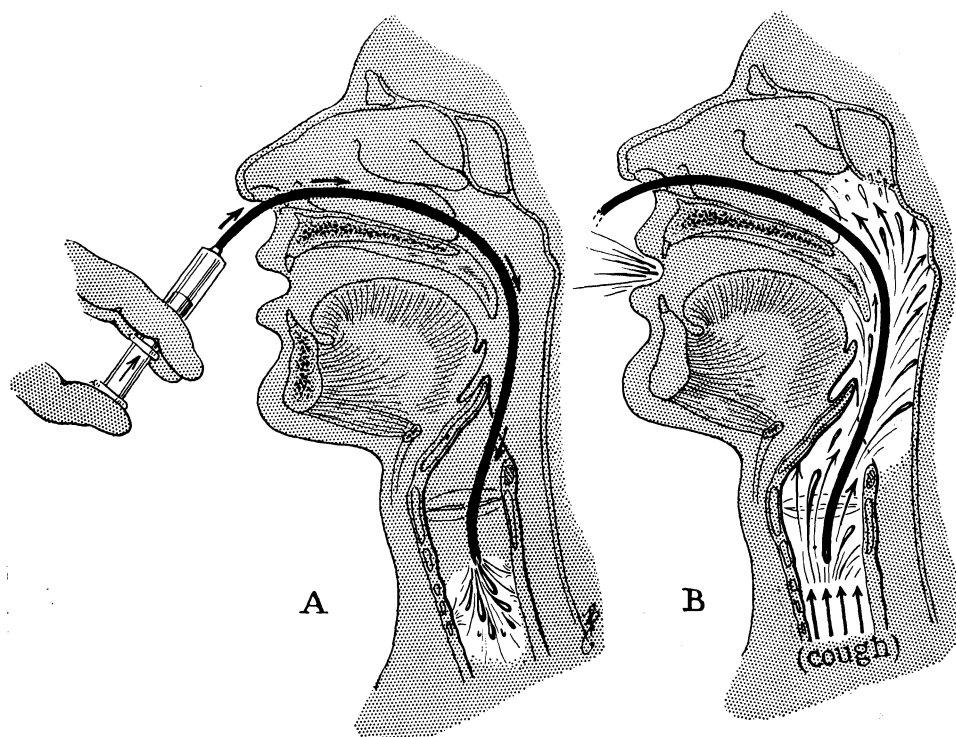


Fig. 1.—A, Nasotracheal instillation of cocaine. Note firm control of syringe barrel to prevent expulsion during coughing.

B, Dissemination of cocaine by coughing, with resultant oropharyngeal anesthesia.

#### DISCUSSION

The present method employs the same principle as transtracheal anesthesia<sup>2</sup> in which the topical agent is introduced into the trachea from where it is disseminated into both upper and lower air passages by respiration and coughing. Certain advantages are apparent in the present method, however, including the avoidance of needle puncture of the trachea, and the opportunity of making a slow injection of the drug.

The routine use of the described technique has considerably reduced the period of preparation for bronchoscopy or bronchography. In almost every instance the patient is ready for study within 5 or 10 minutes after arrival in the operating room.

A number of patients in this series had had previous bronchoscopy or bronchography after the induction of topical anesthesia by the usual means. Without exception, these patients have expressed a preference for the described method.

#### REFERENCES

1. Haight, C.: Intratracheal Suction in Management of Postoperative Pulmonary Complications, *Ann. Surg.* 107: 218-228, 1938.
2. Canuyt, G., quoted by Labat, G.: *Regional Anesthesia*, Philadelphia and London, 1922, W. B. Saunders Co., pp. 304-305.