

CURRENT COMMENT AND CASE REPORTS

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A NEW METHOD OF ADAPTING THE INTRATRACHEAL INHALER TO TRACHEOTOMY TUBES AND A TECHNIQUE FOR ITS USE WITH ENDOTRACHEAL TUBES

Various methods have been employed to adapt the intratracheal inhaler to tracheotomy tubes.* In many instances the meth-

* Supplied under the Trade Name Tracheox Injector by the O.E.M. Corp.

ods employed have been inefficient and unsatisfactory and have tended to limit or impede the patient's ventilation. To correct these deficiencies a method of adaptation of the intratracheal inhaler has been devised.

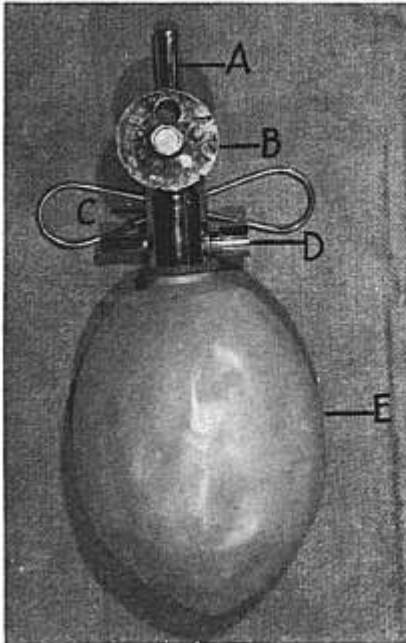


FIG. 1. The intratracheal inhaler without adapters: A, connecting tube; B, positive pressure meter; C, inspiratory valve; D, safety valve; E, collecting bag.

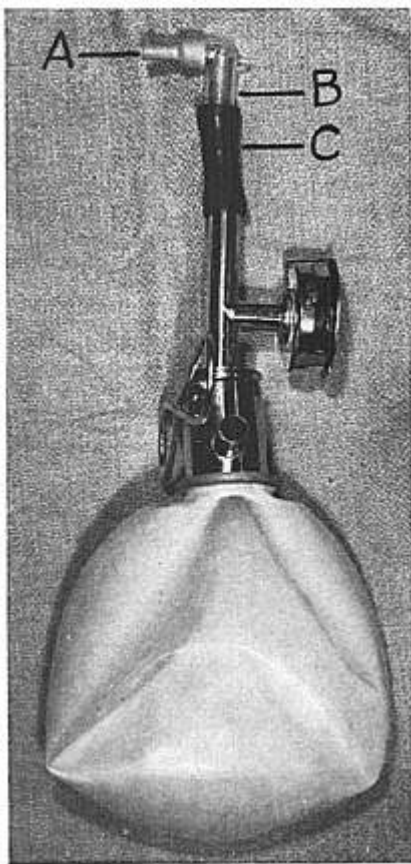


FIG. 2. The intratracheal inhaler with adapters for tracheotomy use: A, tracheotomy tube adapter; B, plastic elbow; C, semirigid rubber tubing.

The intratracheal inhaler (fig. 1) † is a device used for the administration of oxygen in concentrations of from 40 to 100 per cent, or mixtures of helium and oxygen,

† Illustrations by Mr. R. J. Henning, Photography Service, St. Vincent's Hospital.

through a tracheotomy tube. The device is designed to allow administration of the gases with or without positive pressure on exhalation. The unit consists of (a) a connecting tube, (b) a positive pressure meter, (c) an inspiratory valve, (d) a safety valve

which goes into operation in the event the flow of oxygen is inadequate or the supply unexpectedly becomes exhausted, and (e) a collecting bag for the gas.

The tracheotomy tube adapter is a light, semirigid rubber nipple, the walls of which are thin but firm (fig. 2A), thus providing a large lumen and allowing for the adminis-

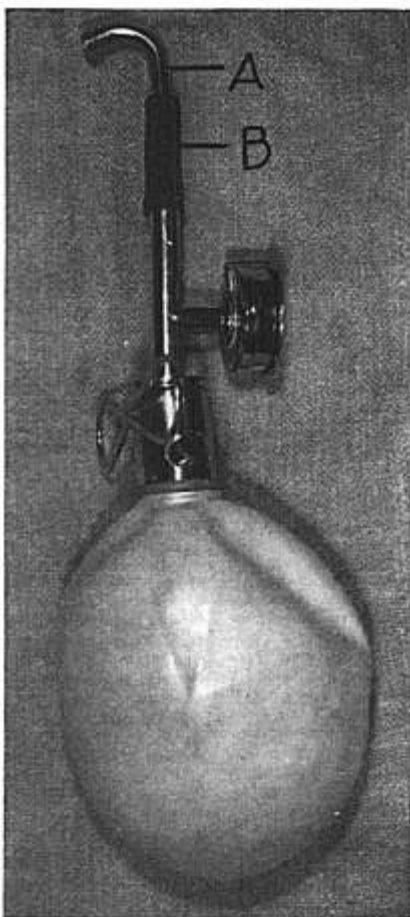


FIG. 3. The intratracheal inhaler with adapter for insertion into endotracheal tube: A, Magill elbow; B, semirigid rubber tubing.

tration of gases without interference with ventilation. The nipple adapter is provided in five different sizes to fit corresponding tracheotomy tubes. The entire unit can easily be removed by the nurse for suctioning of the patient's airway and for cleaning, and it can easily be reinserted.

The connecting tube of the usual intratracheal inhaler is cut off at a distance of 3.8 cm. (1.5 inches) from the junction of the positive pressure meter. This is done so that the final total dead space does not exceed that of the original inhaler. A piece of semirigid rubber tubing 3.8 cm. (1.5 inches) long (C of fig. 2) is then slipped on the free end of the connecting tube and a plastic elbow is inserted on the opposite end of the rubber tubing. The nipple adapter of proper size is connected to the unit and connection is made with the tracheotomy tube by way of the other end of this nipple.

Whether the patient is breathing properly or suction is needed can be determined by observing the plastic elbow. When the patient inhales, the plastic tube is transparent and when he exhales, the warm exhaled air tends to cloud the elbow.†

‡ The plastic elbow and adapters may be obtained from American Hospital Supply Corp. College Point, L. I., N. Y.

A "Y" ADAPTER FOR OPEN SYSTEM INTUBATION ANESTHESIA

For those who desire to use an open limb system of anesthesia when intubating patients for tonsillectomies and other procedures on the ear, nose and throat, the availability of a universal adapter has presented a problem. Although some types of "Y" adapters have been obtainable for this work, a complication has arisen in that one has not been made that will fit a series of connectors. This has necessitated carrying several adapters when one could suffice. With the help of Dr. Richard Foregger, however, a "Y" adapter has been manufactured that will fulfill this requirement.*

It will be noted (fig. 1) that this instrument possesses several advantages:

* This adapter may be obtained from the Foregger Company, New York, N. Y., with either a long or short "Y." It is available in two sizes, one fitting the Foregger, the other the Adams series of connectors.

The intratracheal inhaler may also be used for the administration of gases through an endotracheal tube. This can be accomplished simply by removing the plastic elbow and tracheotomy adapter and replacing them with the proper size Magill elbow to fit a corresponding endotracheal tube (fig. 3).

SUMMARY

A method for connecting the intratracheal inhaler, utilizing a nipple adapter, is described. The use of the inhaler unit with endotracheal oxygen therapy and resuscitation problems is presented. By employing these procedures the patient can be given from 40 to 100 per cent oxygen or mixtures of helium and oxygen without impeding ventilation. The practice of inserting nasal catheters for the endotracheal administration of gases can be abandoned.

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1. It is applicable for use in any age group, since it is made to fit a series of connectors. This adaptability is possible because the adapter ends of the Foregger or Adams connectors are constant in diameter, while the catheter ends decrease in diameter to fit various sized endotracheal catheters.

2. The suction trap is directly and easily accessible at the top of the instrument. Its opening is controlled by a removable plug, held in place by a snug fitting, that may be pulled out and replaced at will.

3. The disadvantage of a screw top to the suction trap has been eliminated by the plug. This feature allows both ease of operation and elimination of the danger of dropping a loose part into the operating field, since the plug is attached to the adapter by a short chain.