

Airway Obstruction with a Fenestrated Tracheostomy Tube

To the Editor:—Fenestrated tracheostomy tubes have been used to facilitate weaning patients from a tracheostomy while keeping the tracheal stoma patent.^{1,2} By permitting breathing via the larynx, the fenestrated tube helps patients regain their protective reflexes, as well as allowing for vocalization. Recently, we have encountered serious upper airway obstruction in two patients upon closing the proximal end of the tracheostomy tube due to improper positioning of the fenestra. This seems to be related to the presence of the fenestra in the pretracheal tissues rather than the trachea (fig. 1). Because of many individual variations, Bendixen, *et al.* recommended tooling of the fenestra by hand to insure adequate size and correct positioning.² Another disadvantage of the tracheostomy tube is that even with deflation of



FIG. 1. Xeroradiogram of the neck, showing tracheostomy fenestra mostly in the pretracheal tissues rather than in the trachea.

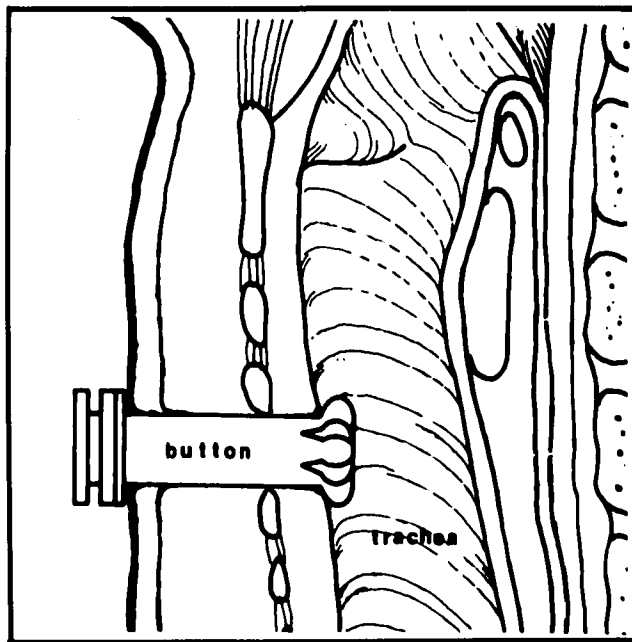


FIG. 2. Diagram showing Olympic tracheostomy button in place.

the cuff, airway resistance may be increased, thus making it more difficult for patients to expectorate secretions.³

We have found the tracheostomy button to be a safer alternative to the fenestrated tracheostomy tube during the weaning stage (fig. 2). The button allows vocalization and use of the entire cross-sectional area of the trachea for breathing while keeping the tracheal stoma patent in case reintroduction of a tracheostomy tube becomes necessary. Prior to the insertion of the button, a probe is inserted into the stoma to measure the length from the anterior tracheal surface to the skin of the neck. Spacers between the skin and the outside of the button may be needed occasionally in patients with small amounts of pretracheal tissue. A cloth tie around the button is advisable to guard against the remote possibility of aspiration of the button with deep breathing.

In 1961, Kistner and Hanlon described a similar button. Unlike the Olympic tracheostomy button, the outlet of the Kistner button has a one-way valve cap that permits only inspiration, while exhalation takes place via the larynx. The valve allows building up of sufficient intrathoracic pressure to produce effective coughing and expulsion of secretions. Although our experience with the tracheostomy button

is limited, it is evident that it is a safer alternative to the fenestrated tracheostomy tube during the weaning stage.

REBECCA A. LIM, M.D.
Assistant Professor

M. RAMEZ SALEM, M.D.
*Professor and Assistant Chairman
Department of Anesthesiology
Loyola University Stritch School of Medicine
Maywood, Illinois 60153*

GEHL DAVIS, M.D.
Resident

*University of Miami School of Medicine
Miami, Florida*

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(Accepted for publication July 21, 1978.)

Self-regulating Pressure Valve for Pumping Blood

To the Editor:—Conventional hand-bulb cylinders or pressurized bags for infusing blood rapidly are unsatisfactory when rapid, constant flow infusion is desired. We have developed an inexpensive pressure regulator that is easily added on to the standard Fenwal® blood pump that corrects this problem. The bulb on the Fenwal pump is removed, and by means

of a luer-lock coupler, an extension that mates with a Condflow regulator* is added. This, in turn, is attached to a No. 10XT-H standard oxygen pressure line (fig. 1).

* Vosslec Co., 4917 Lankershim Blvd, North Hollywood, California 91601.

FIG. 1. Extension with Condflow regulator.

