An Inexpensive Homemade Balloon Cuff for Endotracheal Tubes

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In 1893, Maydl1 conceived of a plan for introducing an anesthetic through a tracheal tube; and Eisenmenger1 added an inflatable cuff around the distal end of the tube. However nothing was done with these ideas for over a quarter of a century. In 1924, Waters2 described the "carbon-dioxide absorption" method of anesthesia, and four years later Waters and Guedel3 published an article on the "Intratracheal Catheter" in which they described a cuff to be made either by cementing a piece of rubber sheeting around the catheter or by a double layer of rubber slipped tightly over the tube.

We have constructed a rugged cuff with material found in and around the hospital at the cost of only a few pennies.

Materials used:
1) A piece of doweling one-half inch in diameter.
2) One-half inch Penrose tubing at least four inches long.
3) A catheter size No. 10.
4) Rubber cement (See Figures 1 to 5).

Method:
1) Make a notch in the dowel one and one-half inches long and deep enough to accommodate catheter.

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FIGURE 2 (top).—FIGURE 3 (middle): The black line is merely a demarcation of the turned back edge with ink).—FIGURE 4 (bottom).
2) Slip the penrose tubing over the notched end, and two inches past the notch.

3) Fold the Penrose tubing back on itself.

4) Insert the catheter between the layers of the Penrose tubing, to the end of the notch.

5) Apply cement between layers of Penrose tubing and around catheter for a distance of one inch. Roll on flat top or table to spread. Let stand overnight to dry. Slip tubing and catheter off dowel, and balloon cuff is ready for use.

FIGURE 5

REFERENCES