

An Oro-endotracheal Tube Brace for Infants

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We have had experience with prolonged oro-tracheal intubation in conjunction with an infant volume-cycle respirator.† The major disadvantage of the oral route is that stabilization is less secure than with the nasal route. Usually, we have secured the oro-endotracheal tube to the infant's face at one corner of the mouth with adhesive tape. This has led to ulceration of the corner of the mouth due to pressure and difficulty in keeping the tube at the proper level due to facial movements and to perspiration and saliva which make the tape nonadhesive.

A brace to eliminate these problems was designed (fig 1). The brace is a horseshoe-shaped device, to the top of which is welded a spring-loaded clip. The height of the horseshoe is 9 cm., and the total length of the metal strip before bending is approximately 22 cm. The brace is made of malleable 16-gauge stainless steel-nickel.‡ The spring clip is commercially available.§ The inside of the brace is lined with adhesive moleskin, the soft surface in contact with the infant's face. A thin layer of sponge rubber is glued to the inside of the jaws of the clip for firm holding of the endotracheal tube, yet not impinging on its lumen. The teardrop ends present a greater area.

The brace is bent to adjust to the infant's face. After whatever shaving is necessary, the patient is intubated, the skin area painted with a single layer of tincture of benzoin and the brace attached with moleskin in such a posi-

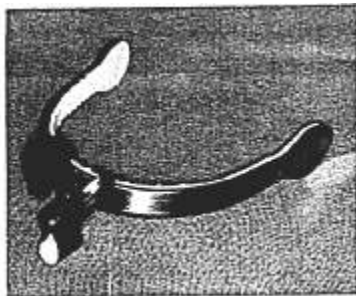


FIG. 1. Oro-endotracheal tube brace.

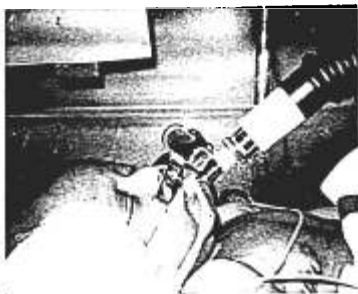


FIG. 2. Oro-endotracheal brace in use.

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† Bourns, Inc., Life Systems Group, 300 Airport Road, Ames, Iowa.

‡ Manufactured by Bethlehem Steel (Spec. #304). Local supplier, Cragg Company, Half Street, S.W., Washington, D. C.

§ Available from Edwards Company, 9839 Roosevelt, Westchester, Illinois 60153. Part #7615, "security clamp."

tion that the jaws of the clip overlie the center of the infant's mouth. The endotracheal tube is positioned in the jaws of the clip, where it is held securely for prolonged periods (fig. 2).

The advantages of this type of brace are: Pressure areas from the tube against the mouth are eliminated. Stability is greatly improved. The level of the tube can be varied quickly and easily without removing any tape. The

tube can be easily changed by simply removing and re-attaching the brace. The brace is simple and inexpensive to make.

We have used this brace for periods as long as ten days without skin problems or other undesirable effects.

The author is indebted to Capt. Keith Taylor, ANC (Ret) for selecting materials with which to construct the brace; to Mr. Clifton H. Reintzer, Instrument Maker at Walter Reed Army Medical Center, for constructing the brace; and to Mr. Leslie H. Freedman, Chief, Inhalation Therapy Section at Walter Reed General Hospital, for advice and assistance.

Letter to the Editor of Clinical Workshop

A PRACTICAL STETHOSCOPE APPROXIMATOR

To the Editor: Attachment of a precordial stethoscope for routine monitoring of chest sounds can be difficult. Obesity, pendulous breasts or prominent ribs present obvious problems. The operative position of the patient may interfere with skin contact of the stethoscope diaphragm and, therefore, with optimum transfer of signals. In our hands, adhesive-tape application of the stethoscope never solved these problems. Hair defeats the tape; large areas had to be shaved if the anesthesiologist wished to rely on the precordial signal. "Gluing," rather than taping, is our solution. The stethoscope diaphragm is left in place, and shaving is necessary over a two-inch circle only.

Originally, we cut one- to two-inch-diameter circles from double-faced pressure-sensitive rolls such as Mystik® (Borden Chemical, Northfield, Ill. 60093) and Dobl-Stik (Kleen-Stik Products, Inc., Chicago, Ill. 60631) and used these for application of the stethoscope. For the past year, we have been using commercially-available discs of polyethylene film

coated on each side with chemically-inert adhesive.

These "approximators" are remarkably effective. We believe they allow better signal transfer than any other method of stethoscope application and overcome the difficulties mentioned above. The tape is resistant to dissolution by the commonly-used "prep" products. Following hundreds of applications, we have seen no skin reactions to these discs in our patients. The adhesive is easily removed and leaves no residue. The approximators are available commercially from:

Tektronix, Inc., Box 500, Beaverton, Oregon 97005.

Hewlett-Packard Co., Sanborn Division, Waltham, Mass. 02154.

Medical Products Division, 3 M Co., St. Paul, Minn. 55101

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