

Anesthesia machine breathing tube holder

A Ram Doo and Sang-Kyi Lee

Department of Anesthesiology and Pain Medicine, Chonbuk National University Medical School, Jeonju, Korea

Breathing tubes connect the anesthesia machine to the endotracheal tube and are composed of inspiratory and expiratory corrugated limbs. The two breathing tubes carry respiratory gases with volatile anesthetics to and from patients during general anesthesia. Although longer corrugated breathing tubes allow the anesthesia machine to be located farther from the patients, they are so long and flexible that they tend to hang down below the operating table and strain the endotracheal tube. When the breathing circuit system is interrupted due to disconnection of the elbow connector or Y-piece connector or due to a kinked tracheal tube, a dangerous ventilation failure may result. Breathing tube holders may help to avoid these accidents. Various commercially available breathing tube holders are used for this purpose increasingly commonly, but it is the authors' opinion that they have some drawbacks along with their advantages. Breathing tubes can easily become unattached from conventional breathing tube holders, because the grooves for the tubes are too shallow and opened too wide.

We have devised a new design of breathing tube holder that improves practicality, stability and portability (Fig. 1). The "L"-shaped breathing tube holder, which can be made of either metal materials such as stainless-steel or aluminum or acryl, comprises two right-angled limbs (15 cm wide and 35 cm long for the long limb and 15 cm wide and 25 cm long for the short limb). One limb is used as a supporting plate inserted beneath the patient's pillow or operation table mattress, and the other holds the breathing tube. The large grooves on the top and sides of the device support and organize the corrugated breathing

tubes, and numerous small clefts hold intravenous fluid lines or the gas sampling line.

The first advantage of the device is practicality. The lengths of the two limbs of the device are different so as to be applicable to both adults and pediatrics; the longer tube holding limb for adults can be switched to the supporting limb when used for pediatrics. Second, to achieve greater stability, the grooves on the top have narrow openings with widths similar to the outer diameter of the single breathing tube. The breathing tubes may be placed securely without being pulled out of the grooves after being inserted one after another. Also, the right angle of the lateral grooves improves stability. Finally, our device has the ad-

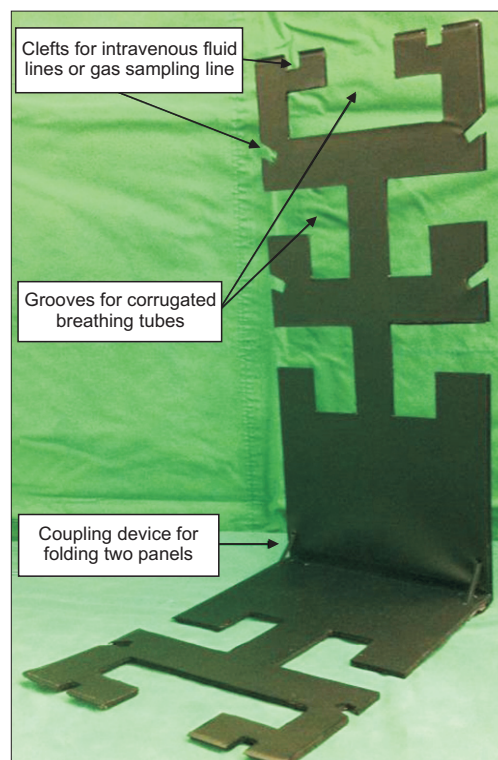


Fig. 1. A new design of breathing tube holder.

Corresponding author: Sang-Kyi Lee, M.D., Ph.D.
Department of Anesthesiology and Pain Medicine, Chonbuk National University Medical School, 20, Gunji-ro, Deokjin-gu, Jeonju 561-712, Korea
Tel: 82-63-250-1241, Fax: 82-63-250-1240
E-mail: leesk@jbnu.ac.kr

Korean J Anesthesiol 2015 February 68(1): 87-88
<http://dx.doi.org/10.4097/kjae.2015.68.1.87>

© This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Copyright © the Korean Society of Anesthesiologists, 2015

Online access in <http://ekja.org>

ditional advantage of portability. This “L”-shaped device can be fully folded into one panel, which facilitates storage and transport. The breathing tube holder may be inapplicable when the device interferes with the operation field, although there are few contraindications for its use.

There are some chances of disastrous ventilation failure due

to unexpected interruption of respiratory circuits in mechanically ventilated patients. Our breathing tube holder mitigates the risk with its superior practicality, stability and portability. Its many advantages make it more reliable and much safer than traditional models.