

Letters to the editor

Modified long Trachlight wand for a double-lumen endobronchial tube

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To the editor: Tracheal intubation using a lightwand device is a useful technique. However, a lightwand is not long enough to intubate a double-lumen endobronchial tube (DLT). We, therefore, modified a Trachlight wand and stylet (Laerdal, Wappingers Falls, NY, USA) and were easily able to intubate a DLT in a patient with protruding teeth. This simple modification has made it possible to develop a wand of any length, even for extraordinarily long endotracheal tubes, and to use a Trachlight for the intubation of these tubes, especially in patients in whom laryngoscopy is difficult.

The stem of the original Trachlight wand is a simple vinyl tube that contains two electric wires. These wires pass through two small channels on either side of the main channel of a stylet. Because the bore of these wire channels is relatively large, two wires can pass through each channel. Although the stem of the wand for adults is elliptical and measures 4.5 mm along the major axis and 35 cm in length, the diameter of the light bulb used is 5.5 mm.

Using two wands for adults, we developed a single wand, 45 cm in length. The base of one of the wands was cut off, and its vinyl tube was cut, 33 cm from the tip, while preserving the two electric wires. The light bulb of another wand was cut off, and its vinyl tube was cut, leaving 12 cm in a similar manner (Fig. 1A). After the removal of rust from the electric wires, these two wands were joined by placing four electric wires into the two wire channels (two wires in each channel) to maintain electrical contact until the cut surfaces were put together exactly (Fig. 1B). A thin tape, 5 cm in width (Kitchen Tape W; Cemedine, Tokyo, Japan), was wound around the joint. The surfaces of the tape were nonconductive, and its adhesiveness was so strong that the joint supported a weight of 5 kg in our test until the vinyl of the wand was stretched to 1.3 times its original length.

A stylet, with a diameter of 2 mm and a length of 49 cm, was made from stainless steel wire. Both its ends were rounded

using sandpaper. It was bent at a right angle, leaving 44.5 cm at one end, to form a trigger. Because these four wires, the stylet, and the tape worked as internal and external stents, the structural stability and isolation of the wand could be secured.

For the intubation of the DLT, the wand, along with the stylet, was attached to the handle. An optimal length of the wand was inserted into the DLT and fixed to the handle with adhesive plaster at a site close to the clamp lever, instead of locking a tube connector (Fig. 1C). As per the usual proce-

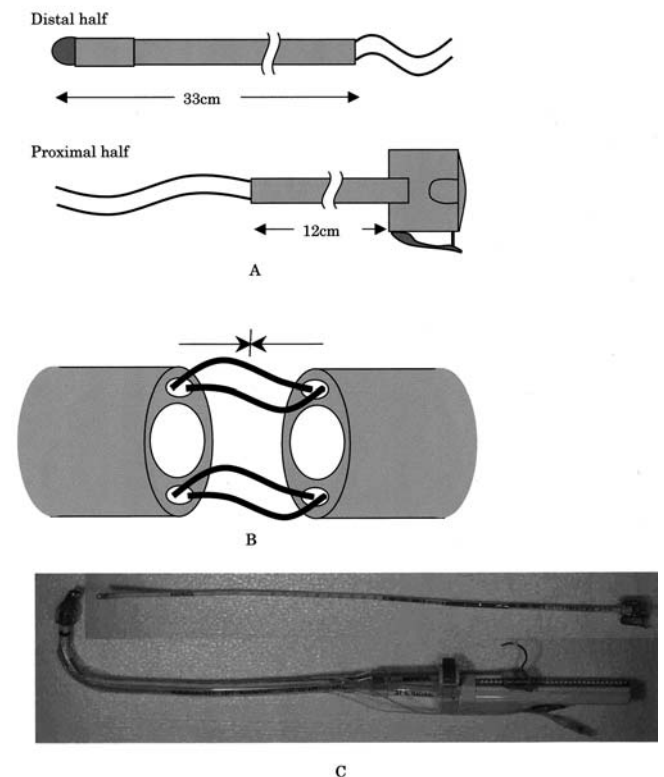


Fig. 1. **A** A wand, 45 cm in length was made from two cut wands. **B** Four electric wires were placed into the two wire channels (two wires per channel) for electric contact. **C** The finished wand (*above*) and a Broncho-Cath with a wand attached (*below*). The wand was fixed to the handle with adhesive plaster (*white arrow*)

ture, the wand and the DLT were inserted into the trachea, with the patient's head in a neutral position. Because the joint in the wand was most likely to come apart during its removal, we ensured that the distal part was secured as soon as the joint came out of the DLT. After the removal of the wand, the DLT was inserted into the desired bronchus, with the patient's head in an extended position.

The internal diameter of a DLT is narrowest at the Y-bifurcation, and it varies according to the manufacturer. The

wand we constructed passed through BlueLine DLTs (SIMS Portex, Keene, NH, USA) of 35Fr and 37Fr relatively easily, and it narrowly passed through a Broncho-Cath DLT (Mallinckrodt Medical, Athlone, Ireland) of 37Fr, but could not pass through one of 35Fr.

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