

New Ncc Double Lumen Intrabronchial Tube For Tracheostomized Patients

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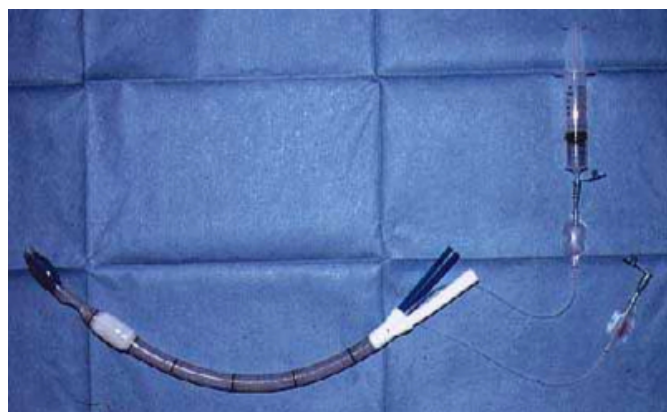
Citation

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Abstract

Conventional double lumen intrabronchial tubes are designed for an insertion through the oral cavity. The tubes are not designed to be placed in patients who have a permanent stoma after laryngectomy. A modified tracheostomy double-lumen tube was previously reported for insertion after tracheostomy but was designed for patients with temporary tracheostomy¹. The curve is too sharp for the mild curvature of the patient's trachea in permanent tracheostomy. Furthermore, the tube is inadjustable to the different lengths between the stoma and carina. The permanent stoma is sometimes unexpectedly fragile and attempting an insertion may damage the structure. In the circumstance a flexible adjustable endobronchial tube is preferable. To insert a tube and keep the airway more safe, we have invented a new double lumen intrabronchial tube for permanently tracheostomized patients. With this tube and in comparing this tube with other two double lumen tubes, we examined their actual usage.

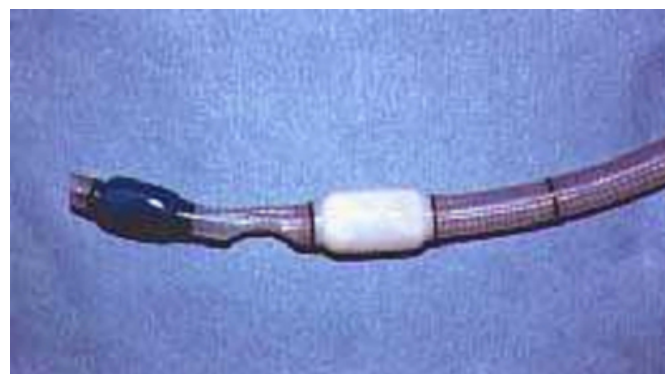
Figure 1



The new endobronchial tube (NCC tube) is a combination of proximal spiral tube and distal Robertshaw-type double-lumen tube. We made two different sizes in this new tube.

The sizes are the same as 37 and 39 Fr conventional double lumen tube (Mallinckrodt medical, athlane, Ireland). The inner and outer diameters are the same as the conventional tube. To make the new tube less irritating, we made its tip more soft. The proximal part is as flexible as a spiral tracheal tube to fit the curved airway. The spirals are to protect the tube from kinking and occlusion as well as to support connection of two parts.

Figure 2



With approval by the Ethical Committee in National Cancer Center Hospital we examined the new NCC tube in seven patients who had received chronic tracheostomy. In four patients laryngectomy had been performed due to esophageal cancer, and in three due to pharyngeal cancer. The four were scheduled to undergo a lobectomy for lung cancer, the two were scheduled to a bullectomy for pneumothorax after attempts of central venous line, the other one were scheduled to an open chest drainage against a mediastinal abscess after esophagectomy. All patients had the new left-sided double-lumen endobronchial tube inserted. In all patients the new NCC double lumen tube was inserted through the permanent tracheostomy stoma. The insertion was smooth and did not cause any irritation or

bleeding. Fiberscopic examination proved that the left-sided bronchial cuff could be properly placed. We could keep the tube in place for all surgical procedures. In following blood-pressure, capnography, pulse-oximetry and blood gas analysis we did not see any gross differences between this new double lumen tube compared to the older types.

We conclude that the new NCC double lumen tube is a better tool and more appropriate in patients with permanent tracheostomy stomas.

References

1. Anesthesiology 74:388-389,1991

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