MARKING OF TRACHEAL TUBES

RANJIT R. CHATRATH*

TRACHEAL INTUBATION of patients is commonly used for anaesthetic purposes, to maintain the airway during ventilation and resuscitation and for clearing secretions from the tracheo-bronchial tree. Intubation is being frequently practised by physicians other than anaesthetists, and as the technique has become more popular complications associated with it have become more common. One of the problems is difficulty in knowing whether or not the tube is correctly placed. Dislocation of the tube from the larnyx due to insufficient depth of insertion and bronchial intubation both occur. These mishaps certainly occur more frequently during surgery than one is led to believe and most go unreported because they are associated with short term intubations. Hurried emergency intubation may be associated with a higher incidence of poorly placed tubes. It is a common practice in many institutions and particularly in intensive care units to take X-rays after intubation to ascertain the location of the tube in the trachea.

Some tubes have numbered markings showing the distance in centimetres or

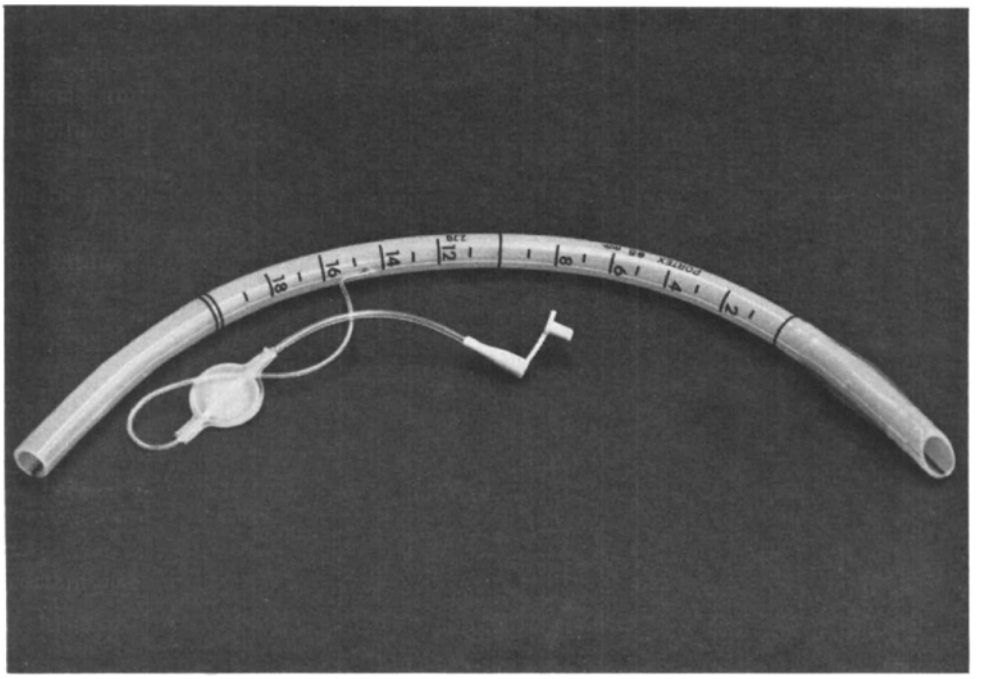

FIGURE 1.

*Memorial University, St. John's, Newfoundland.

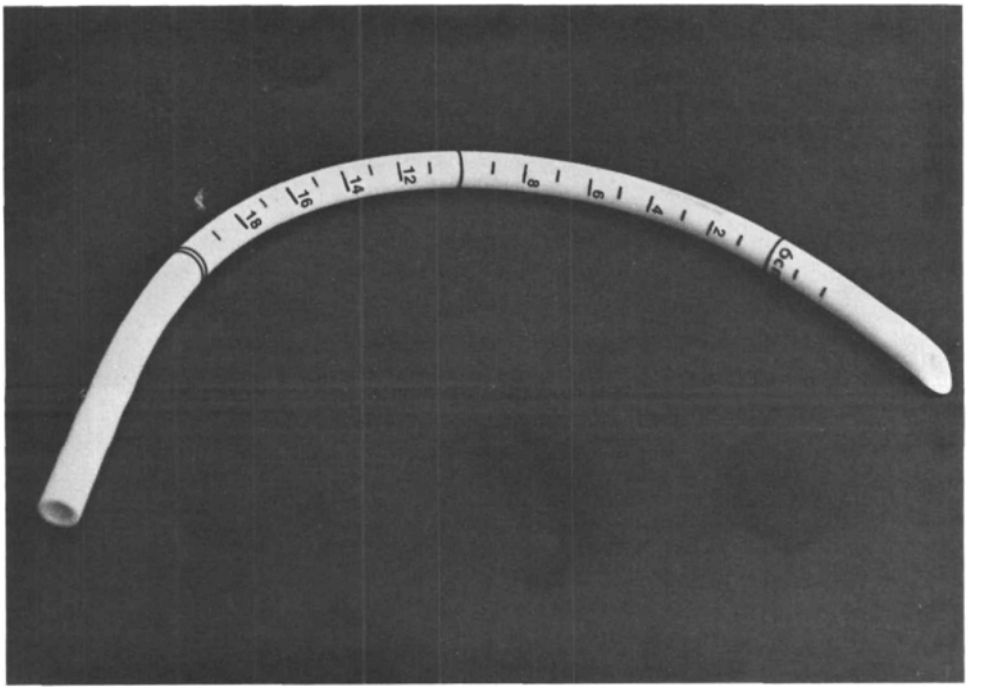

FIGURE 2.

millimetres from the tip of the tube. Certain paediatric tubes are marked on the side at 2 cm, 3 cm and 4 cm, and have markings at the machine end which tell the distance from the tip of the tube. The disadvantage of these markings at the machine end is that they may be cut off when the tube is shortened. In practice they are not very useful, as one is not interested in the length of the tube from the tip to the level of the teeth or nostrils. In practice it is the length of tube beyond the vocal cords that matters. This length may be registered by having marks on the tube at fixed distances from the cuff line or the tip of the tube. It is essential that these marks be placed on the tube in a way which makes them visible during the process of intubation. We propose that all cuffed tubes should have a circle located 1 cm proximal to the cuff line and a line marker each 2 cm from this circle, towards the machine end of the tube. To make these marks visible during intubation they must be applied to the concave surface of the tube and extend laterally over the sides of the tube. They should be numbered as shown in Figure 1. Dots placed between these lines on the concave surface of the tube provide a mark at each centimetre in this illustration.

For tubes without cuffs, or nasal tubes, the first mark should be made at a fixed distance from the tip. The example shown in Figure 2 is a distance of 6 cm. In paediatric tubes the first mark should be a distance of 2 cm from the patient end.

The advantages of such marks are that one can know accurately the distance which the tube extends beyond the cords, and the exact length of tube extending from the mouth or the nostril. This makes it possible to advance or retract the tube

a known distance. The marks also make it possible to determine how far one is passing the suction catheter beyond the tip of the tube during bronchial suction.

ACKNOWLEDGMENT

The author would like to express his thanks to Doctor Cloid D. Green, Department of Anaesthesia, Memorial University of Newfoundland, for his assistance with this paper.