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A Potential Complication Associated with Percutaneous Tracheostomy with an Endotracheal Tube with a Murphy Eye *In Situ*

To the Editor:—The Murphy eye in an endotracheal tube (ETT) was designed to avoid complete respiratory obstruction if the opening in the tube was to become obstructed by mucus¹ and for when the beveled end of the tube rests against the tracheal wall.² There have been reports of fiberoptic endoscope³ and suction catheters emerging through the Murphy eye.⁴ We report a complication involving the Murphy eye during percutaneous dilational tracheostomy (PDT). We performed the procedure as described by Ciaglia⁵ using the Ciaglia Percutaneous Tracheostomy Introducer Set (William Cook European, Denmark).

A 70-yr-old man requiring tracheostomy for long-term ventilation was scheduled to undergo PDT. The patient had a size 7.5-mm ID Sheridan ETT in place. After sedation and sterile preparation of the skin, the neck was inspected, and palpation was used to identify first the thyroid and cricoid cartilages and then the space between the first and second tracheal rings. Subcutaneous lidocaine (0.5% with epinephrine) was then injected, and a small horizontal incision was made between the tracheal rings. A mosquito clamp was then used to gently spread the tissues, after which further dissection and palpation was completed with the index finger. The ETT cuff was then deflated, and the tube was withdrawn slightly. A 15-gauge needle connected to a saline-filled syringe was then inserted through the space between the tracheal rings. It was directed posteriorly and slightly downward. Free flow of air verified entry into the trachea.

In normal situations, impalement of the ETT can be easily felt. In such situations, the ETT is withdrawn about 1 cm, and puncture is repeated. If penetration of the wall of the tube is not felt, the ETT is routinely moved back and forth; movement of the needle confirms that the tube has been perforated. In this case, no resistance was felt during needle insertion, and no needle movement occurred as the ETT was manipulated. The syringe was, therefore, removed from the needle, and a flexible J-wire was introduced into the tracheal lumen without difficulty. An 8-French Teflon catheter guide was then passed over the wire. However, the guide would not advance into the airway. At this point, we suspected impalement of the ETT, although this seemed unlikely because of the previous tests performed. However, it now proved impossible to withdraw the ETT further up into the trachea. This compelled us to remove the dilator and guide wire. The ETT was then fully removed, and the trachea was reintubated under direct vision using an 8.0-mm ID Mallinckrodt ETT. The PDT procedure was repeated. This time, the wire and dilator were easily inserted. Larger dilators were then serially inserted until, finally, a 36-French dilator was inserted. This was replaced with an 8-mm ID tracheostomy tube.

On inspection of the original 7.5-mm ETT, we noted the cuff to be intact. No puncture holes were evident. We believe that the needle must have traversed the Murphy eye (fig. 1).

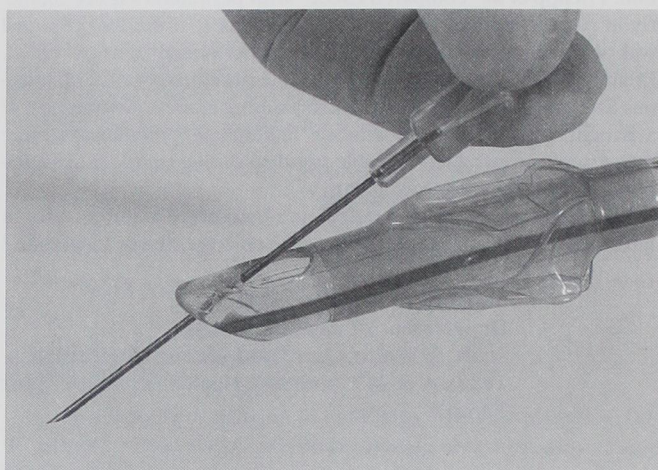


Fig. 1. Needle traversing Murphy eye into the trachea.

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