Bougie-Assisted Cricothyrotomy: Simple and Effective

For novice operators, the bougie-assisted technique was faster and easier than the standard surgical technique.

Rapid sequence intubation and availability of advanced airway devices make the need for emergent cricothyrotomy relatively rare. As a result, providers might be uncomfortable performing surgical cricothyrotomy when the infrequent occasion arises. In this study, 21 medical students and residents were randomized to perform cricothyrotomy on anesthetized sheep with either the standard no-drop surgical technique or a bougie-assisted technique. Training in both techniques consisted of a video demonstration.

The bougie-assisted technique is a modification of the rapid four-step technique (RFST). It involves making a transverse incision through the skin and cricoid membrane with a 20-blade scalpel; using a tracheal hook to grasp the inferior margin of the trachea; inserting a bougie through the incision; and, finally, placing an endotracheal tube over the bougie into the trachea. The bougie-assisted technique was faster than the standard technique (median time, 67 seconds vs. 149 seconds) and was rated easier to perform (median scores, 2 vs. 3 on a 5-point scale); failure rates were similar (1 of 10 and 3 of 11, respectively).

Comment: Surgical cricothyrotomy can be performed using the standard no-drop surgical technique or the rapid four-step technique. The bougie-assisted technique described in this study modifies the RFST by insertion of a bougie before insertion of the endotracheal tube. Operators should learn and practice one or more of these three methods, or a percutaneous (Seldinger) technique, for emergency cricothyroidotomy.

— Diane M. Birnbaumer, MD, FACEP

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