

Ultrasound-Guided, Bougie-Assisted Cricothyrotomy Successful in Cadavers

This novel technique may be useful in emergency department patients.

These authors describe use of an ultrasound-guided, bougie-assisted technique to identify the cricothyroid membrane and perform surgical cricothyrotomy in cadavers. Two emergency medicine physicians (one attending physician with ultrasound training and one resident) each performed the procedure in 21 cadavers (body-mass index, 12.2 to 44.9 kg/m²).

Using the linear ultrasound probe oriented in a longitudinal direction, the operators identified the cricothyroid membrane in a median of 3.6 seconds. After making a surgical incision of the membrane with a scalpel, operators inserted a bougie and passed a size 6 endotracheal tube over the bougie. Median time to completed cricothyrotomy was 26.2 seconds. Dissection revealed that all tubes were placed in the airway. However, in one case the tracheal incision was between the thyroid cartilage and the first tracheal ring rather than through the cricothyroid membrane.

Comment: Emergency cricothyrotomy is a rarely required but essential lifesaving skill. While this study suggests ultrasound can assist in accurately locating the cricothyroid membrane, use of this technique in real time during resuscitation may not be practical. However, inserting a bougie through the incision in the membrane is a technique that can easily be integrated into the surgical procedure.

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- [Medline abstract](#) (Free)