Cricothyroidotomy

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Cricothyroidotomy has the advantages of speed and ease, requiring minimal equipment and surgical expertise, and has great value in the emergency setting when conditions are not optimal to perform a tracheostomy . Cricothyroidotomy is performed through the cricothyroid membrane, which is a fibroelastic condensation connecting the thyroid cartilage to the cricoid cartilage. The cricothyroid artery and vein, the pyramidal lobe of the thyr oid gland and lymph nodes may overlie the membrane. The membrane should be identified precisely before undertaking the proce - dure to avoid injury to adjacent structures; the patient's neck is extended and the area between the prominence of the thyroid cartilage and the cricoid cartilage below is palpated with the index finger of the free hand and, if necessary , the 'laryngeal handshake technique' can be used to define the membrane - (Figure 52.49). Cricothyroidotomy can be performed using the scalpel or cannulae. The scalpel–bougie tube technique is the fastest and most reliable method of securing the airway; a number 10 blade, a bougie and a 6-mm cu ff ed endotracheal tube are needed to perform this, with the patient r eceiving 100% oxy - device, gen and full neuromuscular blockade. A vertical skin incision is recommended with dissection rapidly carried down to the cricothyroid membrane. A 1-cm transverse incision is made through the membrane immedia tely above the cricoid carti - lage and the scalpel twisted through a right angle to gain access to the airway . If available, an artery forceps, bougie, dilator or tracheal hook will improv e the aperture and insertion of an -).

Figure 52.48 Transtracheal needle introduction.

available tube (Figures 52.50 and 52.51). The endotracheal tube allows ventilation using conventional low-pressure equip ment. Cannula cricothyroidotomy can be performed with a narrow-bore (internal diameter ≤ 2 /uni00A0 mm) or wide-bore (internal diameter ≥ 4 /uni00A0 mm) cannula to facilitate oxygenation. Specialist equipment is available f or this, but both techniques are asso ciated with kinking of the cannula and complications, such as device displacement and barotrauma. As soon as practicably possible, the cricothyroidotomy should be converted to a tracheostomy . Although there is debate about the frequency of subglottic stenosis following this procedure, there is general agr eement that it is much increased if any long-term ventilation is undertaken via even a modestly size tracheostomy tube through the cricothyroid membrane.

Figure 52.49 Laryngeal handshake technique as described in the Dif /f_i cult Airway Society (DAS) 2015 guidelines. grasp the top of the larynx (the greater cornu of the hyoid bone) and roll it from side to side. The bony and cartilaginous cage of the larynx is a cone, which connects to the trachea. (b) The /f_i ngers and thumb slide down over the thyroid laminae. cricoid cartilage, with the index /f_i nger palpating the cricothyroid membrane. (Reproduced with permission from Dr handshake technique in locating the cricothyroid membrane: a non-randomised comparative study. Figure 52.50 Incision in a cricothyroidotomy. (a) The index /f_i nger and thumb (c) The middle /f_i

nger and thumb rest on the ew T, McCaul CL. Laryngeal Br J Anaesth 2018; 121 (5): P1173–8.)
Figure 52.51 Insertion of a tube after cricothyroidotomy.

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