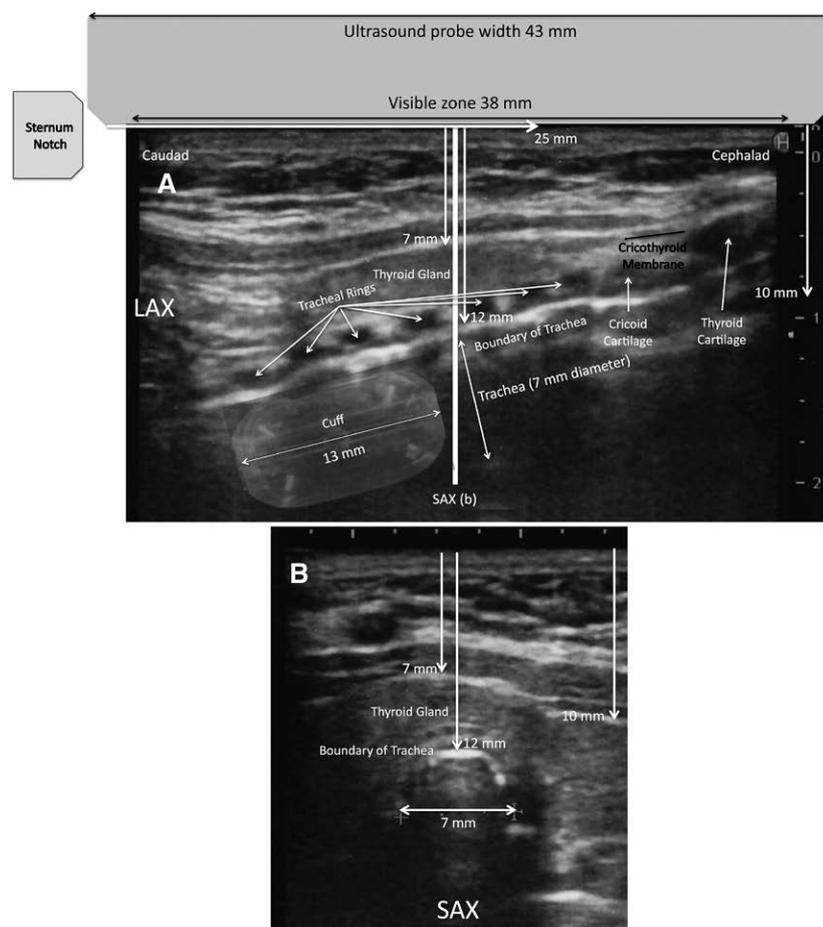


Long-axis Ultrasonic Images of the Pediatric Larynx and Trachea with a Cuffed Endotracheal Tube

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A LONG-AXIS (LAX) view of the trachea and larynx in a 3-yr-old girl after intubation with a cuffed endotracheal tube (4.0-mm internal diameter) (fig. A), and a short-axis (SAX) view of the trachea with a transverse tracheal width of 7.0 mm before intubation (fig. B), were obtained using an ultrasound apparatus with an L12-2 MHz probe. The cricothyroid membrane was palpated around 25 mm from the suprasternal notch etc. Hyperechoic shadows mostly indicated anterior membranes of the cricoid or tracheal cartilage. The saline-inflated cuff position was confirmed below the cricoid cartilage in the trachea. The suprasternal notch is usually above the carina, and cuff position also may lie above the carina.

A laryngeal and tracheal LAX view is easily obtained ultrasonographically in adults,¹ but not in children. Ultrasonography, especially for children, has the disadvantage of requiring specialized skills, and correct identification of anatomical landmarks is difficult.² The thyroid, cricoid, and tracheal cartilage can be more easily distinguished in an LAX than in an SAX view. Palpation of the cricothyroid membrane and an SAX view of the trachea or cricoid cartilage, along with anatomical knowledge, may help obtain

the LAX view. Previously, the position of a saline-inflated pediatric cuff was confirmed using only an SAX view.³ The use of saline in an endotracheal tube cuff is a well-established, safe practice.³ A noninvasive LAX ultrasound image with an inflated cuff may help confirm correct cuff positioning of an endotracheal tube below the caudal edge of the cricoid cartilage and in the trachea.

Competing Interests

The authors declare no competing interests.

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