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Digital Palpation of the Cricothyroid Membrane is Unreliable in Obese Laboring Patients

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*In laboring at-term patients, palpation of the cricothyroid membrane was less accurate in obese than in nonobese patients, whereas ultrasound identified the cricothyroid membrane in all patients.*

Obesity is a common marker of airway difficulty and may make a “can't intubate, can't oxygenate” scenario (and the need for surgical rescue) more likely. Obese obstetrical patients are particularly challenging to manage because of higher rates of oxygen consumption and airway edema. Identification of neck landmarks is critical in performing cricothyrotomy quickly, but obesity can obscure neck landmarks. Ultrasound may augment localization of the cricothyroid membrane, especially when landmarks are indistinct.

Researchers at a Canadian tertiary care academic center randomized 41 anesthesia providers to digitally palpate and mark the cricothyroid membrane in 28 obese or 28 nonobese term pregnant patients in uncomplicated labor. A single ultrasound-trained operator then used a high-frequency linear probe to identify and mark the midpoint of the membrane. The cricothyroid membrane was considered correctly identified if the provider’s mark was within 4 mm of the ultrasound mark.

The median distance between the two marks was greater in obese patients than in nonobese patients (5.0 mm vs. 1.8 mm), and the cricothyroid membrane was correctly identified less often in obese patients (39% vs. 71%). The membrane was easily identified by bedside ultrasound in all patients.

**Comment:** Emergent cricothyrotomy remains a tactile procedure that needs to be performed without delay when indicated. Ultrasound may be helpful in identifying the cricothyroid membrane not only in obese pregnant patients but in any patient with difficult or distorted neck anatomy. However, ultrasound should not delay the decision to perform an emergent cricothyroidotomy.

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