

Category : **Respiratory: mechanical ventilation**

A55 - Feasibility study on novel usage of airway ultrasound to detect subglottic secretion above endotracheal tube (ett) cuff - subsus

A Azma Haryaty¹ ; O Adi¹ ; PF Chan¹ ; R Sallehuddin² ; Z Md Yusof³ ; V Gabrielle⁴

¹Raja Permaisuri Bainun Hospital, Resuscitation and Emergency Critical Care Unit, Emergency and Trauma Department, PERAK, Malaysia, ²Sultanah Bahiyah Hospital, Emergency and Trauma Department, Alor Setar, Kedah, Malaysia, ³Raja Permaisuri Bainun Hospital, Radiology Department, PERAK, Malaysia, ⁴Cardiocentro Ticino, Cardiac Anaesthesia and Critical Care, Lugano, Switzerland

Introduction:

Subglottic secretion was proven as one of the causes of micro-aspiration and increase risk of ventilator-associated pneumonia (VAP). Currently, the method to detect subglottic has not been well established. The purpose of this study is to determine the sensitivity and specificity of upper airway ultrasound (US) in the detection of subglottic secretion, in comparison to CT scan.

Methods:

This prospective study on the upper airway US findings of 50 intubated and mechanically ventilated patients were reviewed and compared with CT scans. The CT scan findings of the presence or absence of subglottic secretion were examined by a single radiologist. The sensitivities, specificities and positive/negative predictive values (PPV, NPV) of the upper airway US findings detection of subglottic secretion were then calculated and compared with CT scan findings.

Results:

Subglottic secretions were detected on upper airway US in 31 patients. The sensitivity and specificity of upper airway US in detecting subglottic secretion was 96.7% and 90%, respectively (PPV 93.5%, NPV 94.7%). Eighteen (58%) patients with subglottic secretions developed VAP (p=0.01). The area under the receiver operating curve (AUROC) is 0.977 (95% CI 0.936-1.00) (**Figure 1**).

Conclusion:

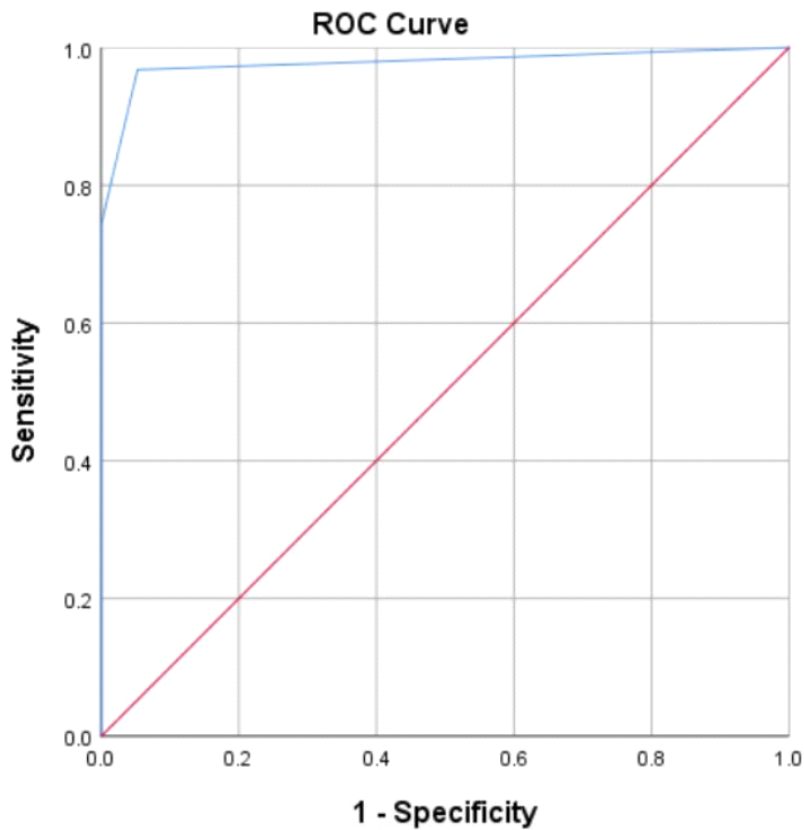
Upper airway ultrasound is a useful tool for detecting subglottic secretion with high sensitivity and specificity

References:

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Image :

		US		Total	
		Subglottic secretion			
		present	absent		
CT scan	present	Count	29	2	31
		% within CT	93.5%	6.5%	100.0%
		% within US	96.7%	10.0%	62.0%
	absent	Count	1	18	19
		% within CT	5.3%	94.7%	100.0%
		% within US	3.3%	90.0%	38.0%
Total	Count	30	20	50	
	% within CT	60.0%	40.0%	100.0%	
	% within US	100.0%	100.0%	100.0%	



Figures showed a sensitivity, specificity, NPV, PPV US subglottic secretion with CT neck (gold standard). Area under the receiver operating curve (ROC) estimates the value of 0.977 between US Subglottic Secretion Score versus CT scan.