

Online Supplement:

- eTable 1: Clinical Questions
- eTable 2: Hart and Staveland's NASA Task Load Index (TLX) assesses workload on five 7-point scales (total of 21 gradations per each subjective subscale). Increments of high, medium, and low estimates for each point result in 21 gradations on the scale.
- eFigure 1: Airway Patency Confidence Average.
- eFigure 2: Airway Patency Confidence Average – Based on SRR Quality.
- eFigure 3: Anatomical Clarity Average – Based on SRR Quality.

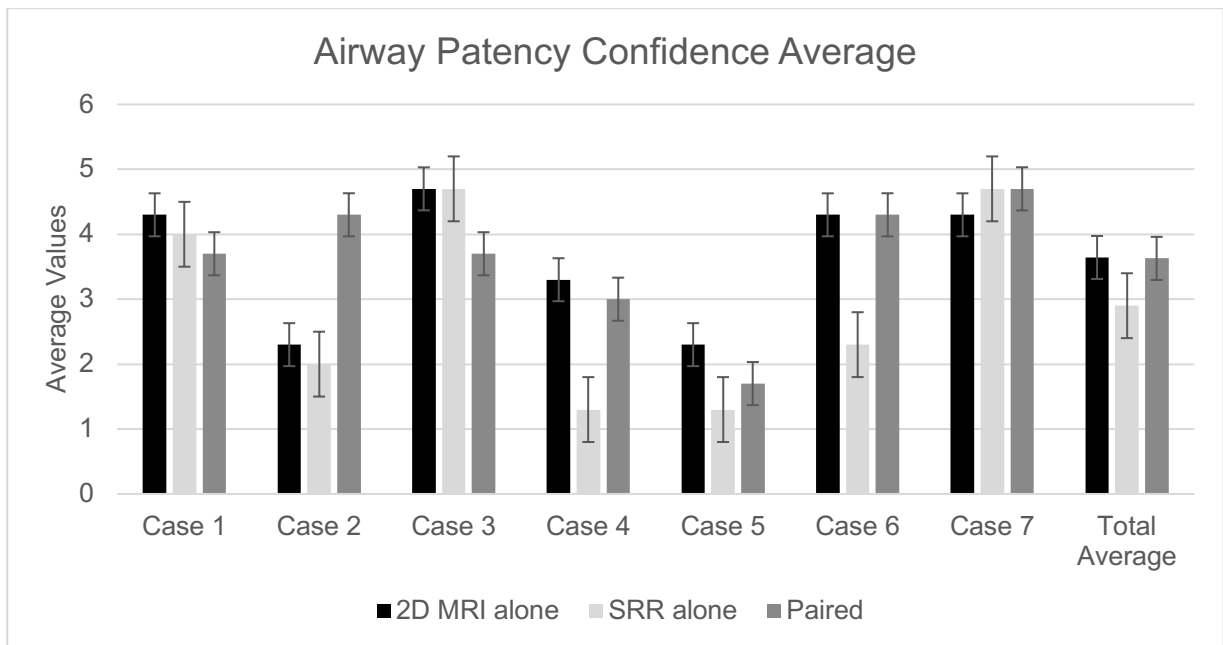
Theme 1: Diagnosis and Confidence of Airway Patency	
Question	Scoring System
Airway Patency	1: Yes 0: No
Confidence regarding airway patency	1: not confident at all 2: slightly confident 3: somewhat confident 4: fairly confident 5: completely confident
Theme 2: Anatomical Clarity (Subjective)	
Anatomical Clarity	0: structure not seen 1: poor depiction 2: suboptimal visualisation 3: clear visualisation of structure but reduced tissue contrast; image-based diagnosis feasible 4: excellent depiction; optimal for diagnostic purposes
Theme 3: Characteristics of mass and Extent of Head and Neck Involvement	
Compression	1: Yes 0: No
Encased	1: Yes 0: No
Cystic?	1: Yes 0: No
Septated?	1: Yes 0: No
Solid?	1: Yes 0: No

Vascular?	1: Yes 0: No
Neck Involvement	1: Yes 0: No
Facial Involvement	1: Yes 0: No
Intra-thoracic extension	1: Yes 0: No

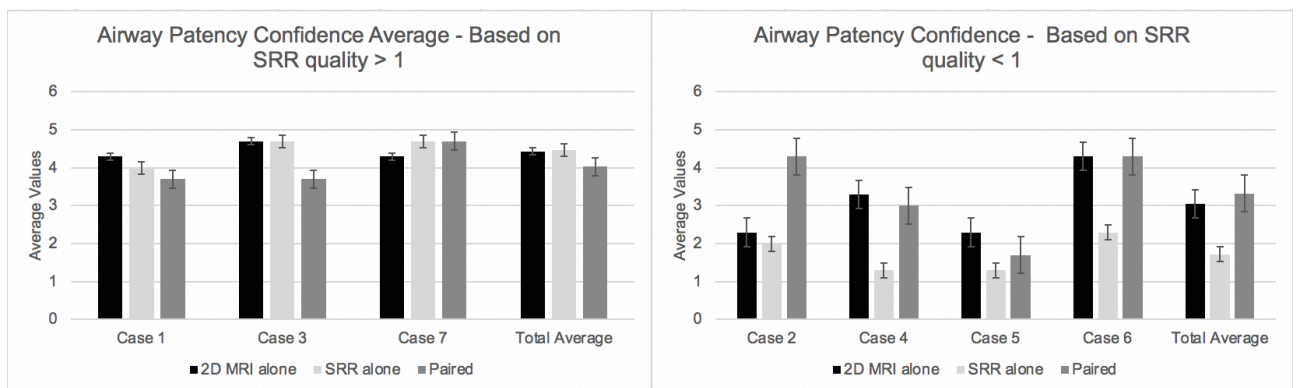
eTable 1: Clinical Questions

Subjective Subscale	Description
Mental Demand	How mentally hurried was the task?
Physical Demand	How physically demanding was the task?
Temporal Demand	How hurried or rushed was the pace of the task?
Performance	How successful were you in accomplishing what you were asked to do?
Effort	How hard did you have to work to accomplish your level of performance?
Frustration	How insecure, discouraged, irritated, stressed, and annoyed were you?

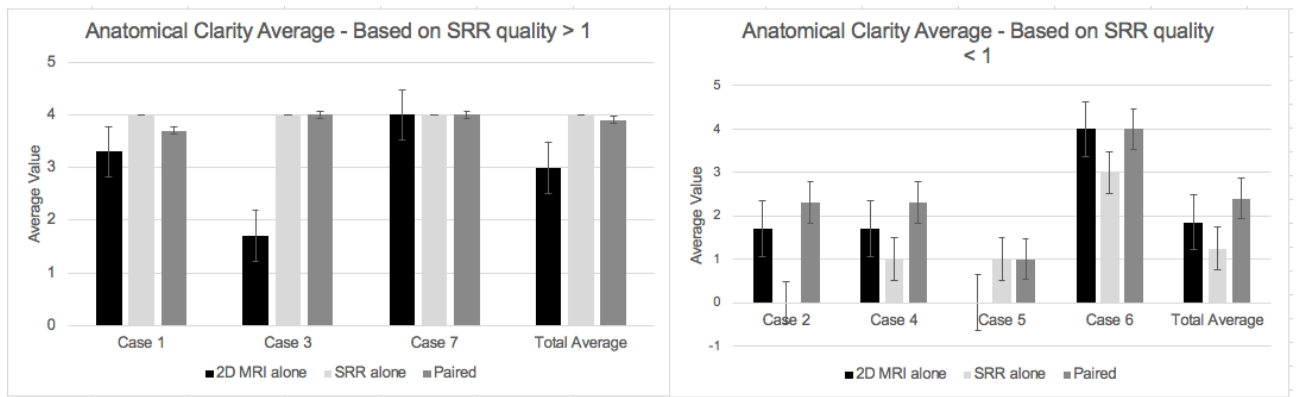
eTable 2: Hart and Staveland's NASA Task Load Index (TLX) assesses workload on five 7-point scales (total of 21 gradations per each subjective subscale). Increments of high, medium, and low estimates for each point result in 21 gradations on the scale.



eFigure 1: Average of Airway Patency Confidence of the three radiologists. This is illustrated for each of the seven cases of airway obstruction and the total average.



eFigure 2: Average of Airway Patency Confidence of three radiologists based on SRR quality >1 (left) and SRR quality < 1 (right) using 2D MRI alone, SRR alone, or Paired.



eFigure 3: Average of Anatomical Clarity Average of three radiologists based on SRR quality >1 (left) and SRR quality < 1 (right) using 2D MRI alone, SRR alone, and Paired Imaging.