

Thoracic ultrasound: inter-rater reliability and agreement

Guideline to score the video-loops

XXXX et al., JVIM

Videoloops

- 50 loops randomly chosen among 400+ (16 seconds loops)
- $n=50$ comes from sample size calculation for finding a kappa of 0.6 to 1 with lower bound 95% CI: 0.4)
- **Bold sentences: indicates how the xls file should be filled**

How to score?

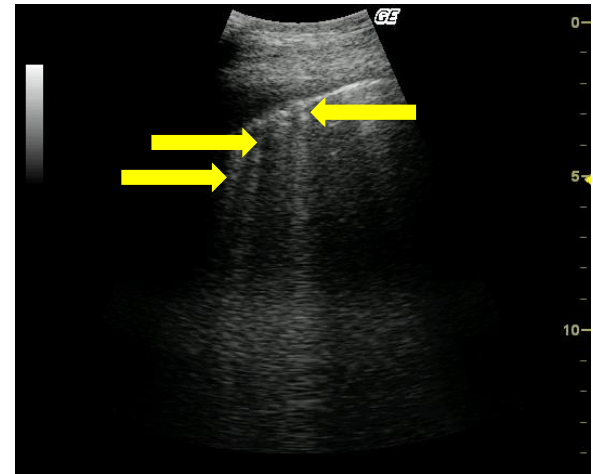
Each loop should be scored using the xls spreadsheet below

Comet-tails	Pleural irregularity	Pleural fluid	Consolidation		Cavitary lesion	Time to perform assessment	
Maximal number on 1 frozen image	absence (0) presence (1)	Maximal depth (cm)	Area cm²	Maximal depth (cm)	absence (0) presence (1)	min	Comment (if any)

Comet-tails

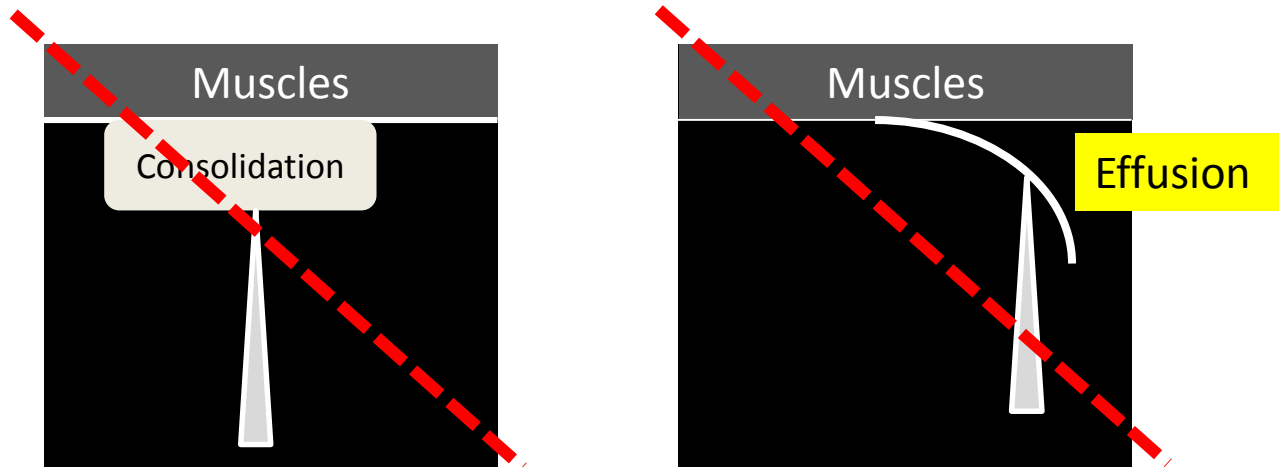
Comet-tails	Pleural irregularity	Pleural fluid	Consolidation		Cavitary lesion	Time to perform assessment	
Maximal number on 1 frozen image	absence (0) presence (1)	Maximal depth (cm)	Area cm ²	Maximal depth (cm)	absence (0) presence (1)	min	Comment (if any)

- Note the maximal number seen per frozen screen on the entire loop.
- Notation **0, 1, ..., 10....**
- Ex: here 3 or 4



Comet-tails

- By definition, a comet-tail is seen at the pleural surface:
 - If found at the interface between consolidated and non consolidated lung it is not a comet-tail *exemple 1*
 - If seen at the visceral pleural in case of pleural effusion => this is not a comet-tail *exemple 2*



These artefacts although similar are not considered as true respiratory comet-tails.

Pleural irregularity

Comet-tails	Pleural irregularity	Pleural fluid	Consolidation		Cavitary lesion	Time to perform assessment	
Maximal number on 1 frozen image	absence (0) presence (1)	Maximal depth (cm)	Area cm ²	Maximal depth (cm)	absence (0) presence (1)	min	Comment (if any)

- Presence yes=1, no=0

Pleural effusion

Comet-tails	Pleural irregularity	Pleural fluid	Consolidation		Cavitory lesion	Time to perform assessment	
Maximal number on 1 frozen image	absence (0) presence (1)	Maximal depth (cm)	Area cm ²	Maximal depth (cm)	absence (0) presence (1)	min	Comment (if any)

- Maximal depth of liquid found in a frozen screen (it is helpful to use the 1cm squared screen)

Consolidation

Comet-tails	Pleural irregularity	Pleural fluid	Consolidation		Cavitary lesion	Time to perform assessment	
Maximal number on 1 frozen image	absence (0) presence (1)	Maximal depth (cm)	Area cm ²	Maximal depth (cm)	absence (0) presence (1)	min	Comment (if any)

- If absence=0
- Quantification in cm (depth) 0.25,... 1,...7cm
- Freeze on the screen with the maximal area of consolidation then counting the squared affected by consolidation 17, 35, 37cm²

Cavitary lesions

Comet-tails	Pleural irregularity	Pleural fluid	Consolidation		Cavitary lesion	Time to perform assessment	
Maximal number on 1 frozen image	absence (0) presence (1)	Maximal depth (cm)	Area cm ²	Maximal depth (cm)	absence (0) presence (1)	min	Comment (if any)

- 0 ou 1 (absence or presence)
- Corresponds to abcedative lesions

Time

Comet-tails	Pleural irregularity	Pleural fluid	Consolidation		Cavitary lesion	Time to perform assessment	
Maximal number on 1 frozen image	absence (0) presence (1)	Maximal depth (cm)	Area cm ²	Maximal depth (cm)	absence (0) presence (1)	min	Comment (if any)

- Record time to perform the full loop assessment **ex: 0.5min, 1, ..., 4min**

Comment

Comet-tails	Pleural irregularity	Pleural fluid	Consolidation		Cavitary lesion	Time to perform assessment	
Maximal number on 1 frozen image	absence (0) presence (1)	Maximal depth (cm)	Area cm ²	Maximal depth (cm)	absence (0) presence (1)	min	Comment (if any)

- Free text:
 - Heart visible
 - Difficult to assess...
 - Other...