Point-of-care ultrasound (POCUS) techniques for the small animal practitioner

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Point-of-care ultrasound is becoming the "stethoscope of the 21st century". It allows for "bedside" quick assessment of critical patents. It includes the rapid assessment of dyspnoeic patents in which pleural effusion, pneumothorax and lung oedema can be differentiated as causes, literally within seconds, once concepts such as lung slide, A-lines and B-lines have been mastered.
POCUS also allows for rapid diagnosis of anaphylaxis when recognising the gallbladder halo sign, in addition to a plethora of other conditions such as cardiac tamponade, bowel perforation, obstruction or intussusception in addition to intra-abdominal bleeding.

Consequently, an Abdominal Focused Assessment by Sonography for Trauma (AFAST), Thoracic Focused Assessment by Sonography for Trauma (TFAST) or Lung UltraSound (LUS) are the first scans that should be performed in any dog presenting with a respiratory or abdominal emergency. The techniques are also used for triage and tracking of ICU patents.

It should be emphasized that POCUS can be performed without resorting to expensive ultrasound machines and LUS and AFAST can both be performed with large animal linear type probes, however, the higher the resolution and the better the software, the better the image quality.

1. The abdominal FAST examination (AFAST)

Indications for the AFAST
How to perform an AFAST examination

- Patient positioning and probe orientation
- Naming and order of the AFAST views

The diaphragmatic-hepatic view (DH view)

- A window into the pleural and pericardial spaces
- The DH view and preload volume status
- Anechoic fluid triangles between liver lobes
- Pitfalls, artefacts and false positives

The spleno-renal view
The cysto-colic view
The hepato-renal view
Finally, the AFAST scoring system

2. The thoracic FAST examination (TFAST)

Indications for the TFAST
How to perform a TFAST examination

- Patient positioning and probe orientation
- Naming and order of the AFAST views
- The "gator" or "crocodile" sign
- Diagnosis of pneumothorax and the search for "lung point"

The Chest tube site (CTS)
The Pericardial site (PCS)
The Diaphragmatic-Hepatic view (DH) - in common with AFAST

3. The VetBLUE lung ultrasound examination (LUS)

What VetBLUE can tell you
How to do a VetBLUE examination

- Patient positioning and probe orientation
- Regional examinations
  - Caudo-dorsal lung lobe region (CDLL)
  - Perihilar lung lobe region (PHLL)
  - Middle lung lobe region (MDLL)
  - Cranial lung lobe region (CRLL)
- Wet lung vs. Dry lung principle
- Ultrasound lung rocket (B-lines), A-lines and the "glide" sign
- Forms of lung consolidation
  - Shred sign
  - Tissue sign
  - Nodule sign