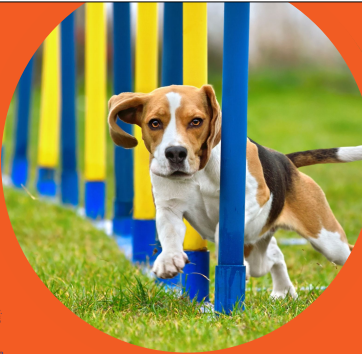


Morpho-functional approach of shoulder and elbow ultrasound in 12 scan planes

Elbow

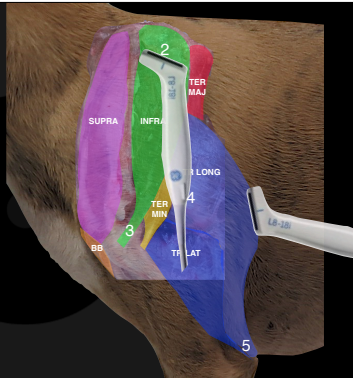
Giliola Spattini
DVM, GP Cardio, CCRT, PhD, DECVI



Thank to www.imaios.com

Ultrasound of the shoulder

1. Deltoid
2. Proximal aspect infraspinatus
3. Distal aspect infraspinatus
4. Proximal aspect of the triceps
5. Distal aspect of the triceps




From the shoulder to the elbow





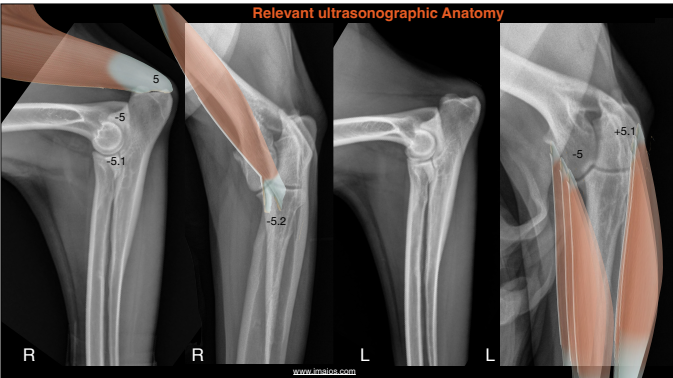
The shoulder ultrasound: elbow steps

1. 5 Triceps tendon insertion
2. - 5 Flexor tendons origin medial epicondyle
3. - 5.1 Cranial margin MCP
4. -5.2 Biceps tendon insertion
5. +5.1 Extensor tendons origin



An anatomical diagram of a dog's elbow joint. The bones are shown in a semi-transparent style. Labels are placed at various points: '5' is at the top of the humerus, '-5' is at the medial epicondyle, '-5.1' is at the cranial margin of the medial carpal process (MCP), '-5.2' is at the biceps tendon insertion, and '+5.1' is at the origin of the extensor tendons.

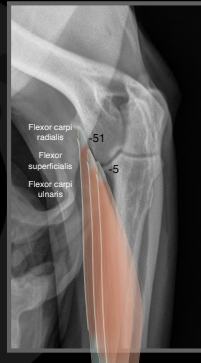
Relevant ultrasonographic Anatomy



Four anatomical diagrams of a dog's elbow joint, showing different views. The diagrams are labeled 'R' (Right) and 'L' (Left). The diagrams show the bones and soft tissue structures of the elbow. Labels are placed at various points: '5' is at the top of the humerus, '-5' is at the medial epicondyle, '-5.1' is at the cranial margin of the MCP, '-5.2' is at the biceps tendon insertion, and '+5.1' is at the origin of the extensor tendons. The diagrams are arranged in a row, with the first two labeled 'R' and the last two labeled 'L'. A small watermark 'www.zshico.com' is visible at the bottom.

The medial epicondyle

- The attachment of the flexor's tendon of the carpus



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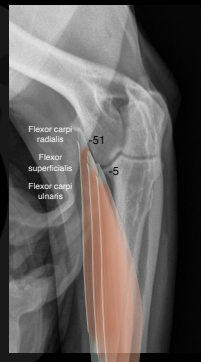


XXX, Golden, XX, X years

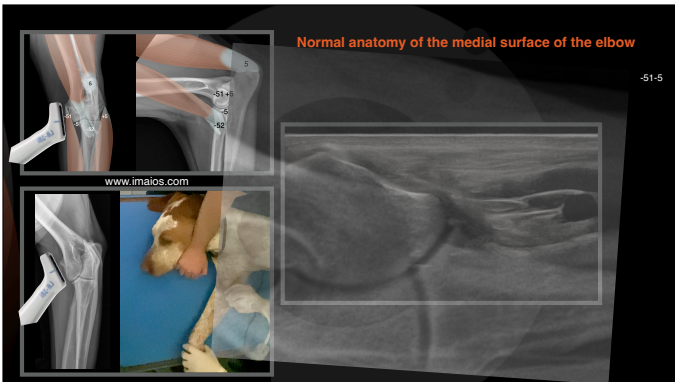
- Lame right front limb at five months of age
- Orthopaedic examination positive for right elbow pain
- Radiographic examination performed at the time

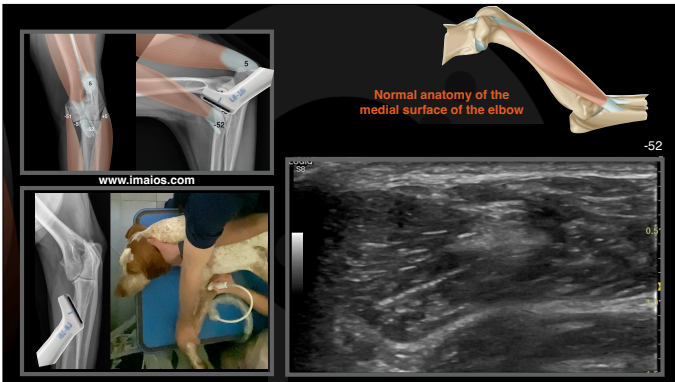
The medial surface of the elbow

- The attachment of the flexor's tendon of the carpus
- Cranial surface of the ulnar's medial coronoid process



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Use of Ultrasonography in Diagnosis of Medial Compartment Disease of the Elbow in Dogs

Maxime Jacqmin¹ ● Véronique Livet² ● Juliette Sonet³ ● Mathieu Harel³ ● Eric Viguier²
 Pierre Henri Moissonnier¹ ● Thibaut Cachon² ● Vet Comp Orthop Traumatol 2023;36:132-138.

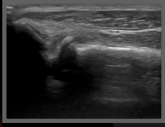
Results of the present study revealed that joint effusion was more frequently found by ultrasonography (10/15), than subtrochlear sclerosis in radiography (7/15) or CT (6/15). Abnormal medial coronoid process was also more frequently seen by ultrasonography (9/15), than by radiography (0/14) or CT (7/15). In all elbows, at least one lesion (subtrochlear sclerosis, joint effusion, or medial coronoid process abnormality) was noticed with at least one imaging technique (radiography, CT scan or ultrasonography) (15/15). In eleven elbows (11/15), at least two lesions were noticed in the medial compartment, and at least three lesions were seen in five elbows (5/15). On the fifteen diseased elbows included in this study, seven and six had not any lesion on radiography and CT scan respectively. Using ultrasonography, joint

1. 15 diseases elbows
2. 13/15 ultrasound
3. 9/15 CT
4. 7/15 RX

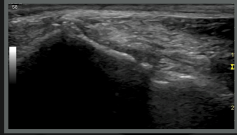
Use of Ultrasonography in Diagnosis of Medial Compartment Disease of the Elbow in Dogs

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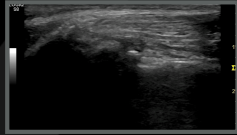
Normal synovial space



Minimal synovial suffrance



Severe synovial effusion (FCP)

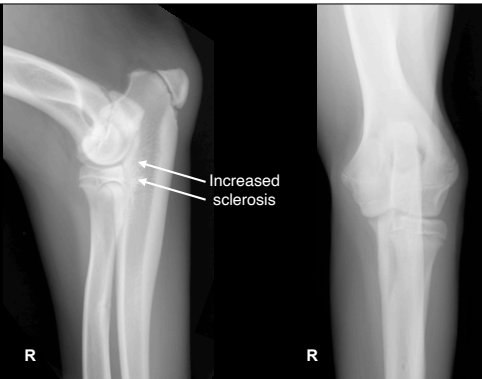


Mia, Labrador, FS, 2 years

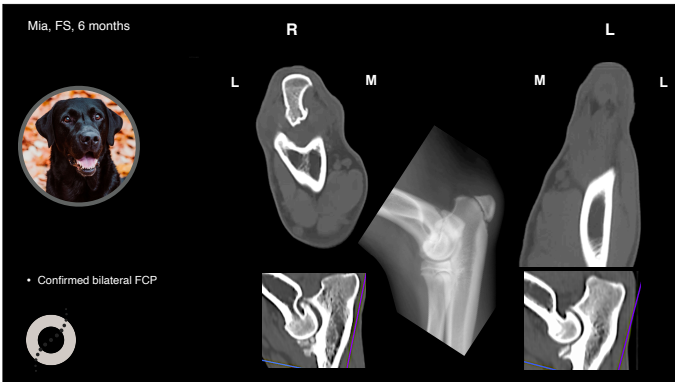
- Lameness right front limb at five months of age
- Orthopaedic examination positive for right elbow pain
- Radiographic examination performed at the time

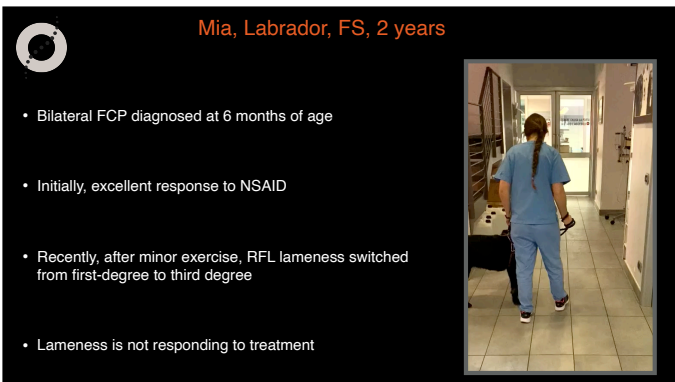


Mia, FS, 5 months



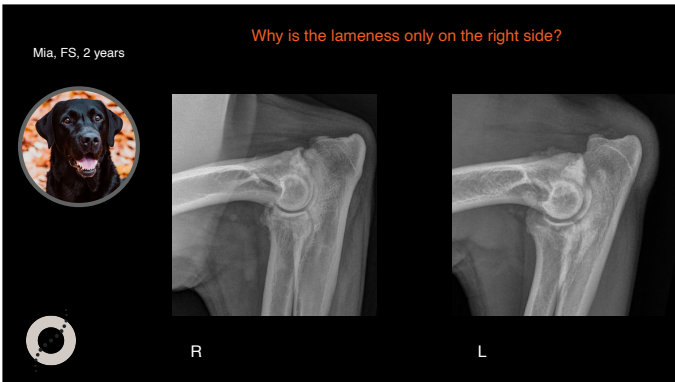






Mia, FS, 2 years

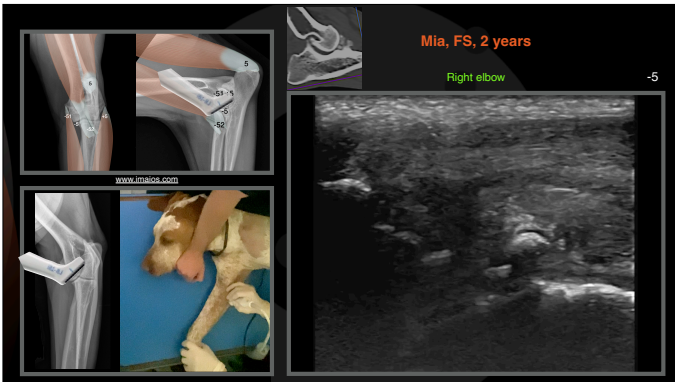
Why is the lameness only on the right side?



R L

Mia, FS, 2 years

Right elbow



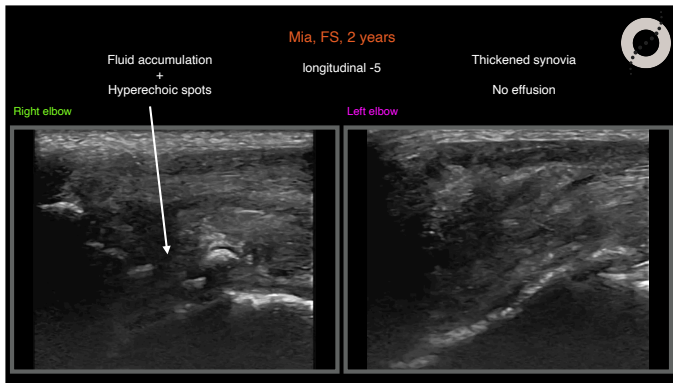
-5

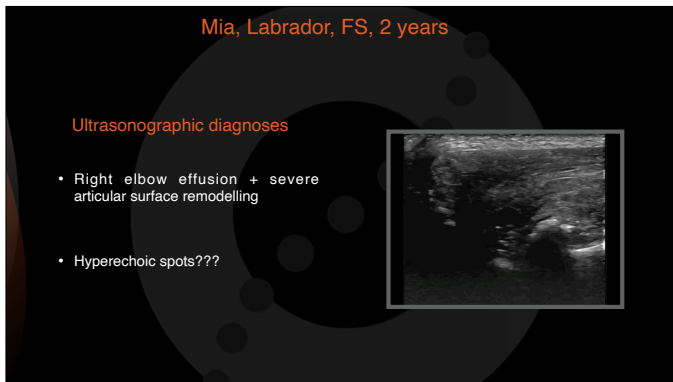
Mia, FS, 2 years

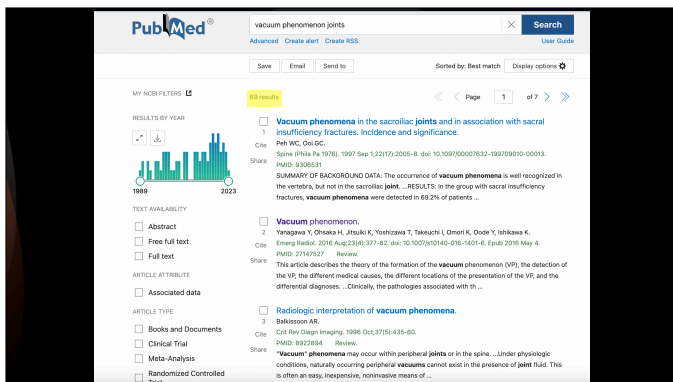
Left elbow



-5





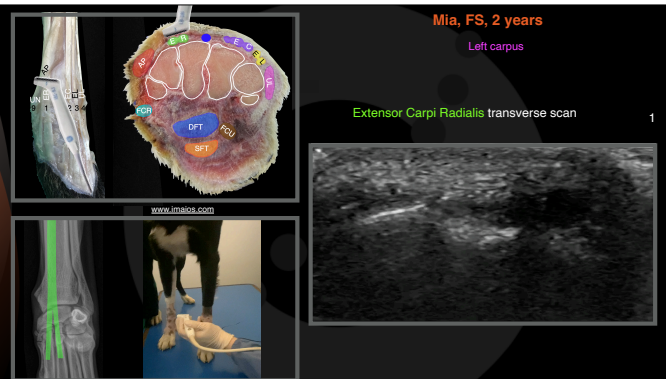
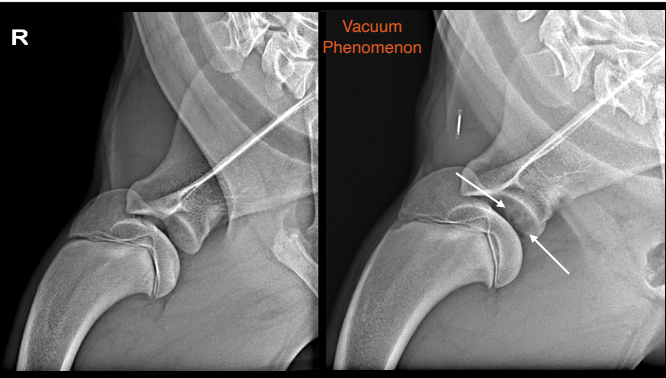


Vacuum phenomenon

Youchi Yanagawa¹ · Hiromichi Ohsaka¹ · Kei Jitsuiki¹ · Toshihiko Yoshizawa¹ · Ryoji Takeschi¹ · Kazuhiko Osumi¹ · Yasumasa Ode¹ · Kouhei Ishikawa¹

the mechanism responsible for the formation of the VP [1]. If an enclosed tissue space is allowed to expand as a rebound phenomenon after an external impact, the volume within the enclosed space will increase. In the setting of expanding volume, the pressure within the space will decrease. The solubility of the gas in the enclosed space will decrease as the pressure of the space decreases. Decreased solubility allows a gas to leave a solution. The combination of lower nitrogen solubility and the minimal metabolism of nitrogen by the body mainly accounts for the formation of the VP. Basically, the mechanism underlying the formation of the VP is the same as cavitation induced by rotation of a ship's propeller in water, which depends on two laws of physics: Henry's Law and Boyle's Law.

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Mia, FS, 2 years
Right carpus

Extensor Carpi Radialis transverse and longitudinal scan 1

Mia, FS, 2 years
Left carpus

Ulnaris lateralis transverse and longitudinal scan 4

Mia, FS, 2 years
Right carpus

Ulnaris lateralis transverse and longitudinal scan



Mia, Labrador, FS, 2 years

Two months follow-up

- She is doing very well
- Physiotherapy once a week and then every two weeks
- No need for NSAID at the moment
- She increased her daily exercises



Thank you



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