

This puppy is not able to walk. What can we do?

Can ultrasound detect the cause of the abnormal gait in this puppy?

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DVM, GP Cardio, CCRT, PhD, DECVDI



Diagnostic Mindset

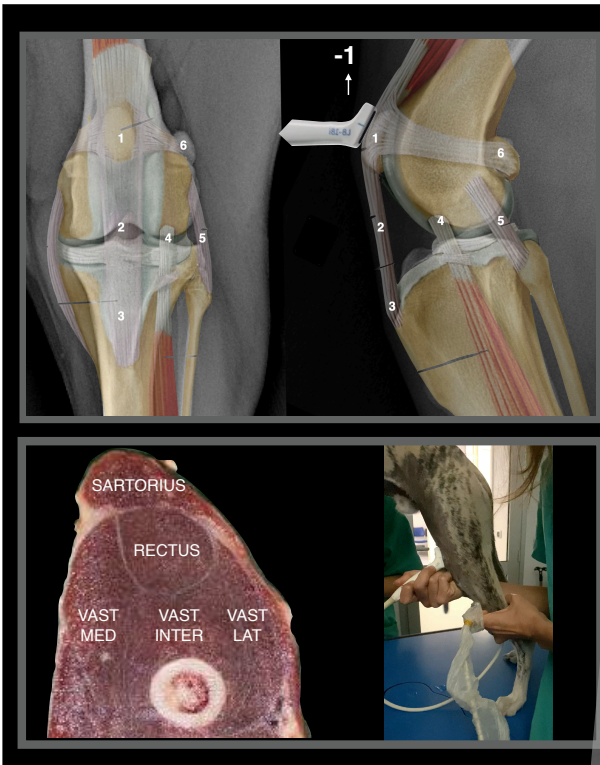
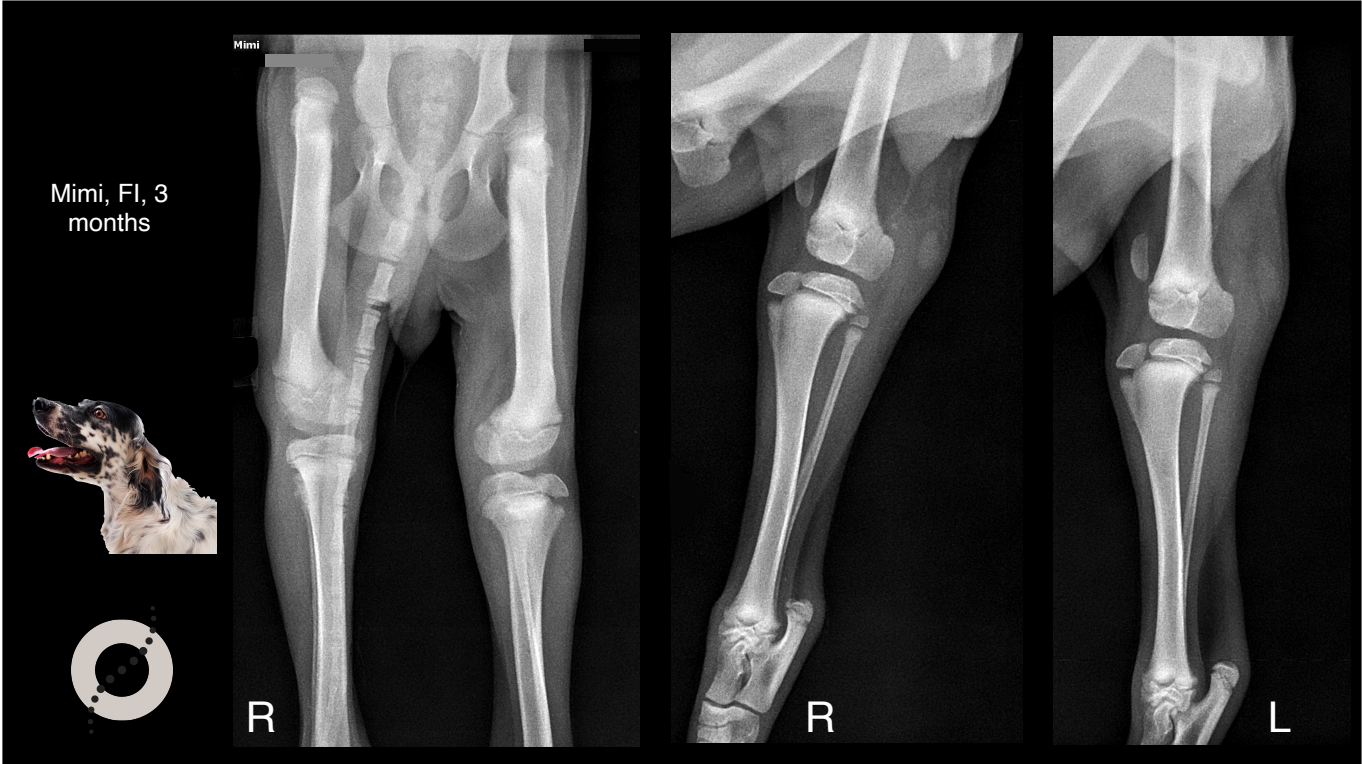


Thanks to [www.imaios.com](http://www.imaios.com)

## Mimì, English Setter, FI, 3 months

- Not able to walk since birth
- The breeder wants euthanasia
- Adopted
- What can be done for this puppy?





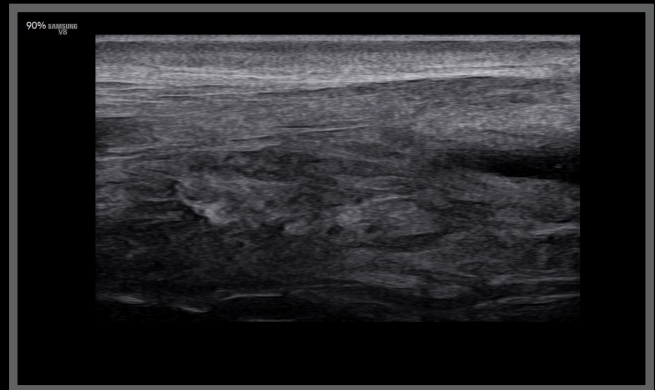
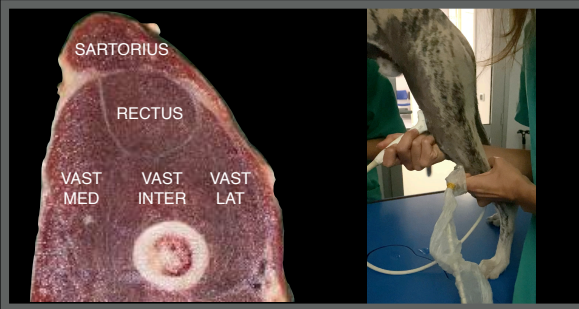
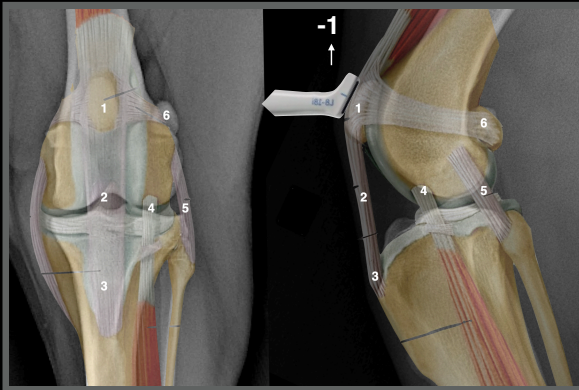


## Mimi, FI, 3 months

Right thigh

Cranial face longitudinal scan

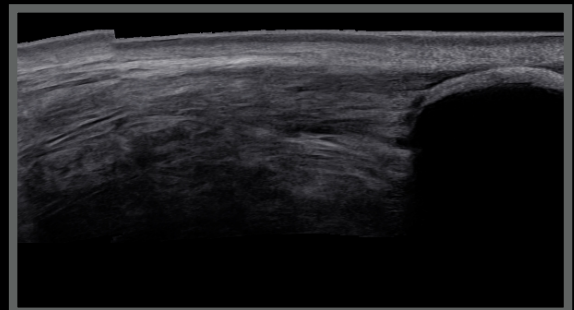
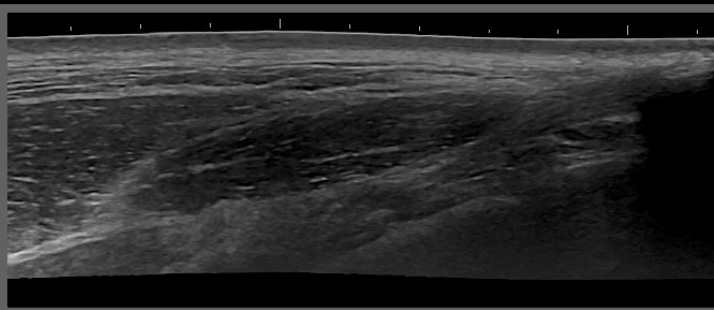
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## Mimi, English Setter, FI, 3 months

Normal ultrasonographic anatomy

Right thigh



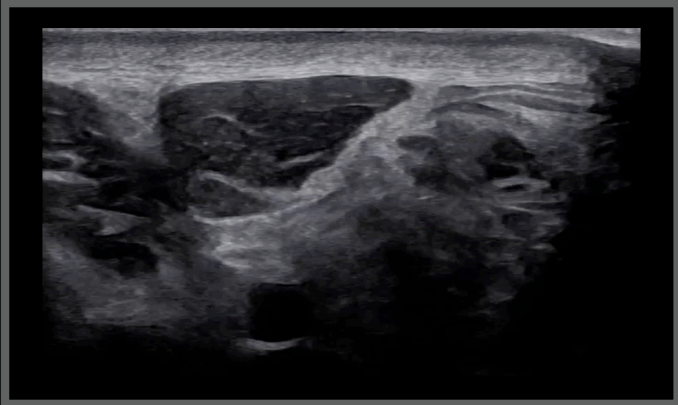
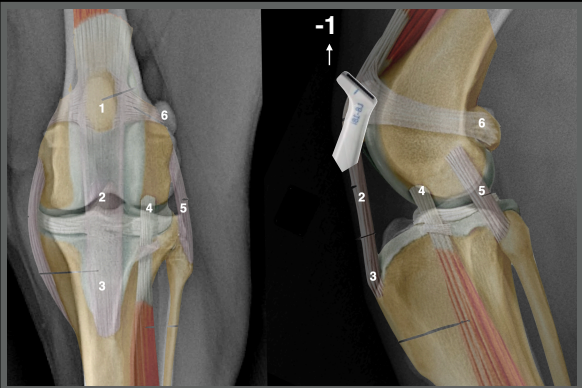


Mimi, FI, 3 months

Right thigh

Cranial face transverse scan

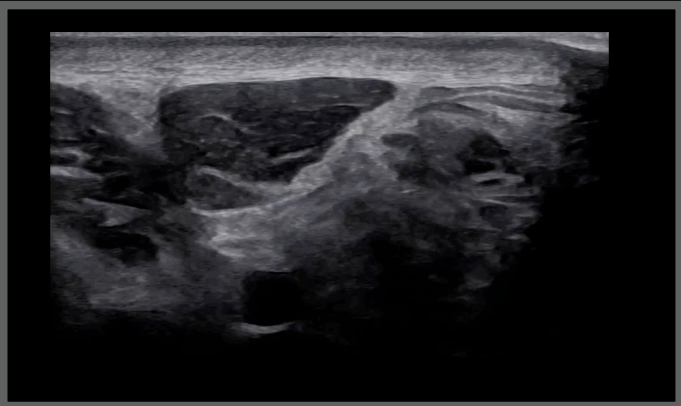
1-1



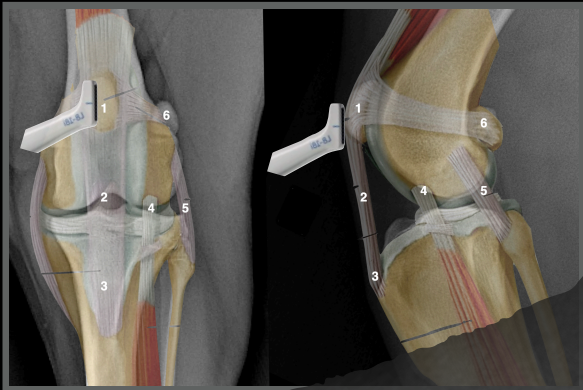
Mimi, English Setter, FI, 3 months

Normal ultrasonographic anatomy

Right thigh

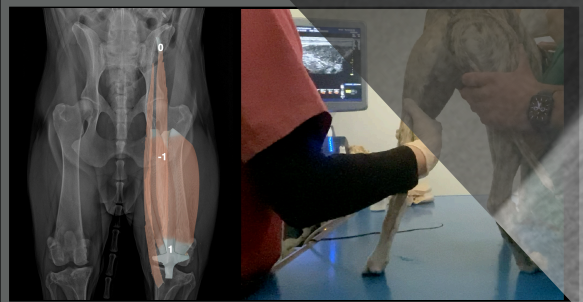
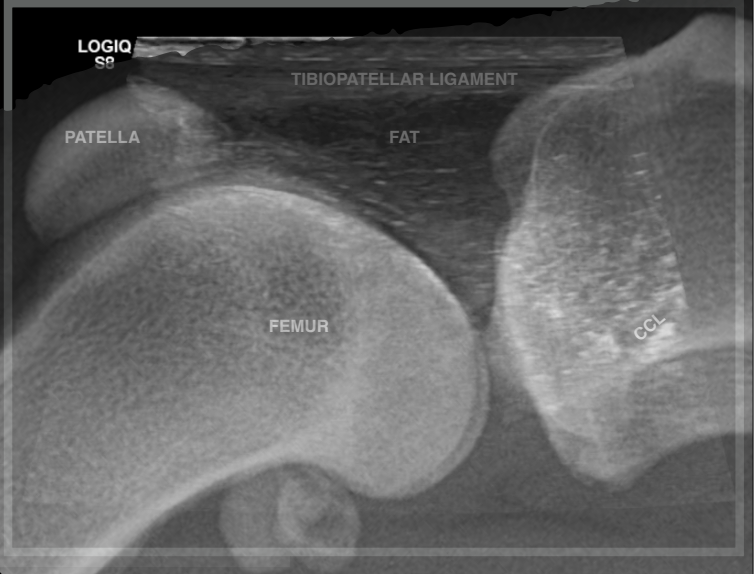


Ultrasonographic anatomy of the cranial face of the stifle



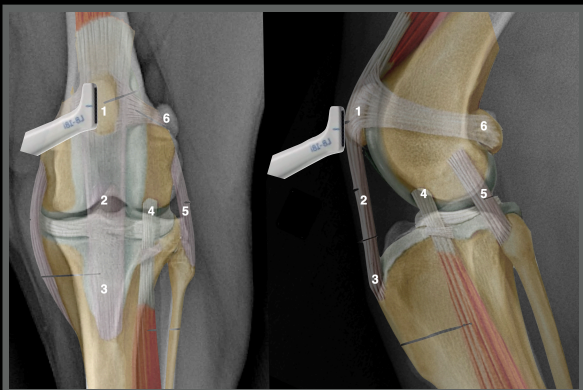
Cranial face longitudinal scan

1-2-3

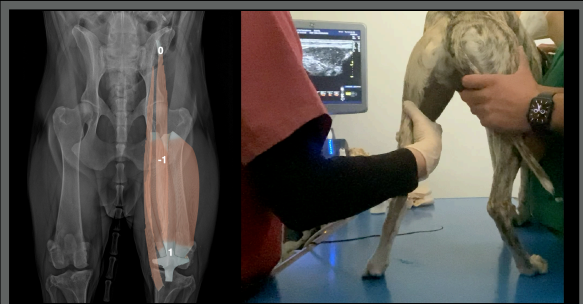
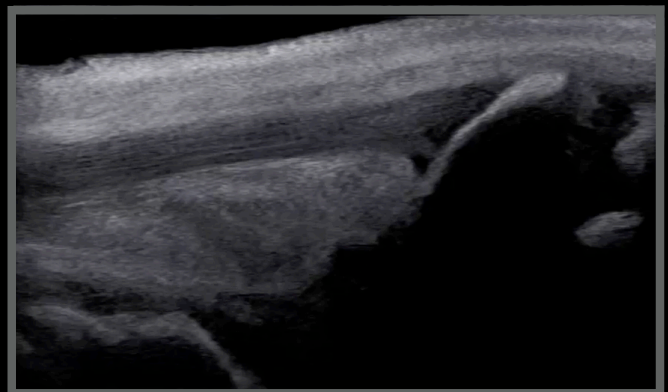


Mimi, FI, 3 months

Right thigh



Cranial face longitudinal scan 1-2-3



## Mimi, English Setter, FI, 3 months

### Ultrasonographic diagnoses:

- What is your ultrasonographic diagnosis?
- Please write your report
- What will you do next?



### How to arrive to Conclusions:

- PE examination
- X-rays, blood works...
- Ultrasonographic findings
- Literature



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Page 1 of 1

RESULTS BY YEAR



1981 2025

PUBLICATION DATE

- 1 year
- 5 years
- 10 years



**Quadriceps contracture in dogs.**

1

Bardet JF, Hohn RB.

Cite

J Am Vet Med Assoc. 1983 Sep 15;183(6):680-5.

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PMID: 6355030 Review. No abstract available.



**Quadriceps contracture and fracture disease.**

2

Bardet JF.

Cite

Vet Clin North Am Small Anim Pract. 1987 Jul;17(4):957-73. doi: 10.1016/s0195-5616(87)50087-0.

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PMID: 3303637 Review.

Fracture disease, which is a complication of fracture treatment and immobilization, is defined as atrophy of bone, soft tissues, nail, skin, and cartilage. This condition is most often seen in **dogs** with **quadriceps contracture**. Distal femoral fractures treated ...



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Hind limb ossification centre hypoplasia and deformities induced by quadriceps contracture: Radiographic and Computed Tomographic study in 13 Doberman Pinscher littermates

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Computed tomography

ABSTRACT

Quadriceps contracture (QC) is reported in dogs mainly as a complication of trauma or parasitic infection. QC causes progressive hind limb deviation, muscular hypotrophy and degenerative joint disease and, in puppies, bone hypoplasia. The aim of this clinical case series is to describe the radiographic and computed tomographic (CT) changes in hind limb ossification centres in thirteen 55 to 57-days-old Doberman Pinscher related littermates induced by QC after repeated intramuscular injections. The presence, size, and shape of ossification centres of affected and unaffected hind limbs were compared. Affected limbs were hyperextended and externally rotated, with *genu recurvatum* and proximo-medial patellar luxation. QC had no influence on the time of appearance of ossification centres however, it was associated with femoral head flattening, hip subluxation, flattening of the femoral distal epiphysis. The tibial plateau was tilted caudoproximally-craniodistally and wedged into the growth plate. Thirty-two out of fifty-five ossification centres (including diaphyseal and epiphyseal centres, such as femoral head and tibial plateau) were significantly smaller in affected limbs ( $p < 0.05$ ). Lack of weight-bearing could account for the smaller size of ossification centres in affected tarsi and metatarsi. Progressive limb hyperextension and external rotation might have induced gradual loading withdrawal on the medial aspect of the foot justifying the reduced size observed only for the medial ossification centres of the digits of affected limbs. To the best of our knowledge, this is the first study describing CT findings of hind limb ossification centre changes in puppies with QC contracture.



typically presenting with severe hind limb lameness. The affected limbs are held in marked rigid extension with evidence of severe muscular atrophy. At rest, limbs are carried cranially with respect to the unaffected limb. Both the stifle and the hock cannot be flexed, and the stifle might be bent backward in *genu recurvatum*. The patella is commonly dislocated proximo-medially. The affected limbs may appear shorter due to hip subluxation (Bardet and Hohn, 1983). In human beings, trans-



(Moore and Sutton, 2009). Finally, Hinged Ilizarov external fixation has been successfully used for the correction of post-traumatic QC in one dog and one cat (Carnevale and Jacchetti, 2004). However, when severe and irreversible joint changes ensue amputation is the sole therapeutic option (Moore and Sutton, 2009). A thorough clinical examination of dogs

## Mimi, English Setter, FI, 3 months

### Conclusions

- Started physical exercises to improve abdominal core
- Follow up to decide if supporting harness needed



Thank you



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