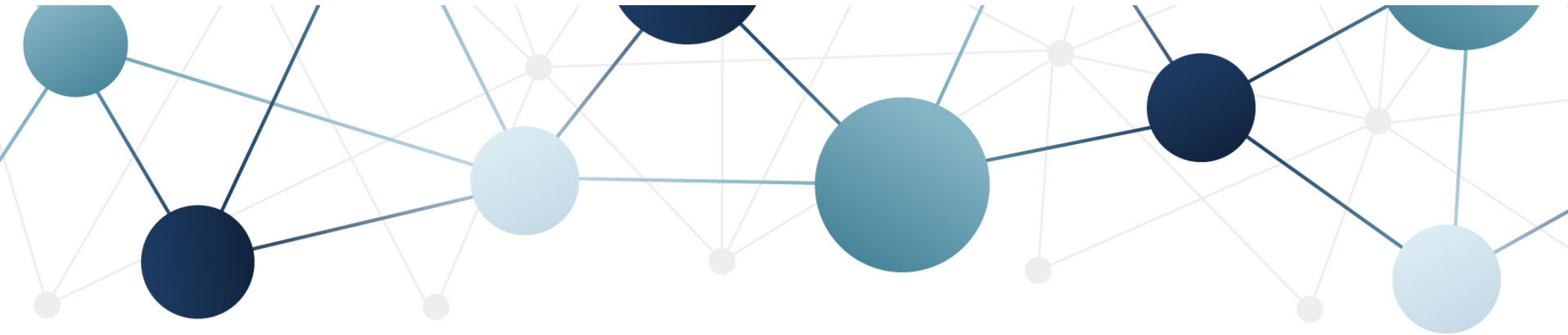




Canine Hip Dysplasia: A Totally Hip Talk

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Board-certified Veterinary Surgeon
MedVet Mandeville





Overview

- What is Hip Dysplasia?
- Diagnosis
- Prevention
- Medical Management
- Surgical Management
- Case Examples
- Questions

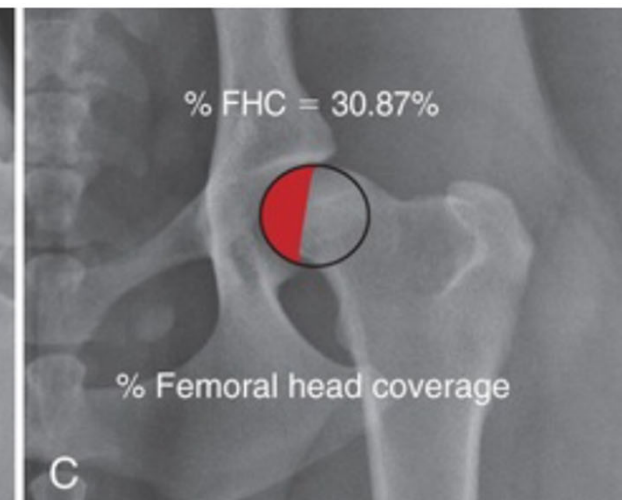
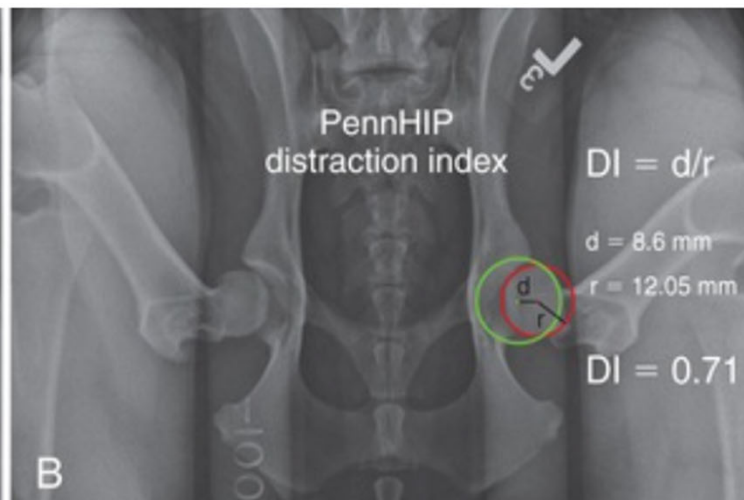
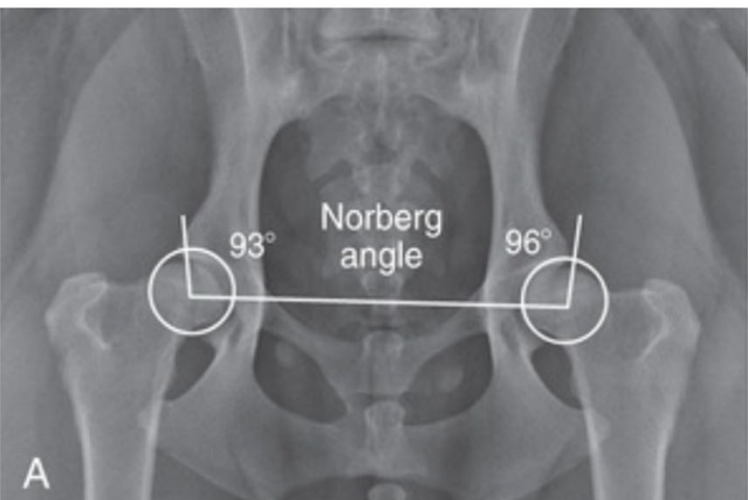


What is Hip Dysplasia?

- Most common orthopedic condition in the dog
- “A varying degree of laxity of the hip joint permitting subluxation during early life, giving rise to varying degrees of shallow acetabulum and flattening of the femoral head, finally inevitably leading to osteoarthritis”
- First described in 1935 by Gerry Schnelle
- Can be seen as early as 7 weeks of age

How To Measure Hip Laxity

1. Norberg angle - >105 degrees
2. Distraction Index - <0.5
3. % of Femoral Head Coverage - > 50%





Breeds

- Many breeds have a genetic predisposition for hip dysplasia
 - Most common are
 - Labrador Retrievers
 - Golden Retriever
 - German Shepherd
 - Great Danes
 - English Bulldog
 - Newfoundland
 - Saint Bernard
 - Cane Corso





Physical Exam

- Lameness is common
- Pain on manipulation of the hip (extension common)
- Ortolani test – subluxation of the hip then being reduced
- Muscle atrophy
- Straight hocks (hyperextension)



Comorbidities (Other reasons for Lameness)

Common

- Cranial cruciate ligament disease
- Patellar Luxation
- Tarsal OA
- LS disease
- Iliopsoas

Uncommon

- Immune Disease
- Discospondylitis
- Joint Infection
- SDFT Luxation

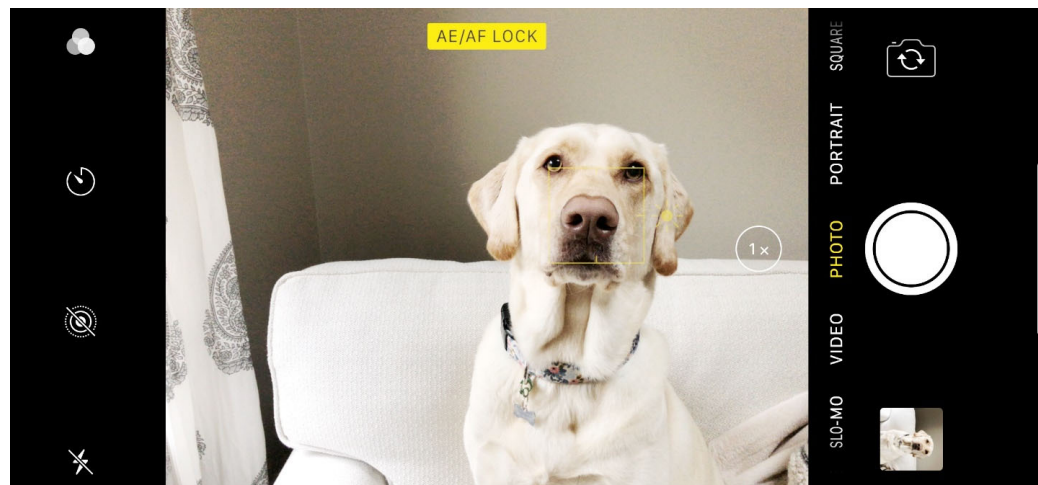






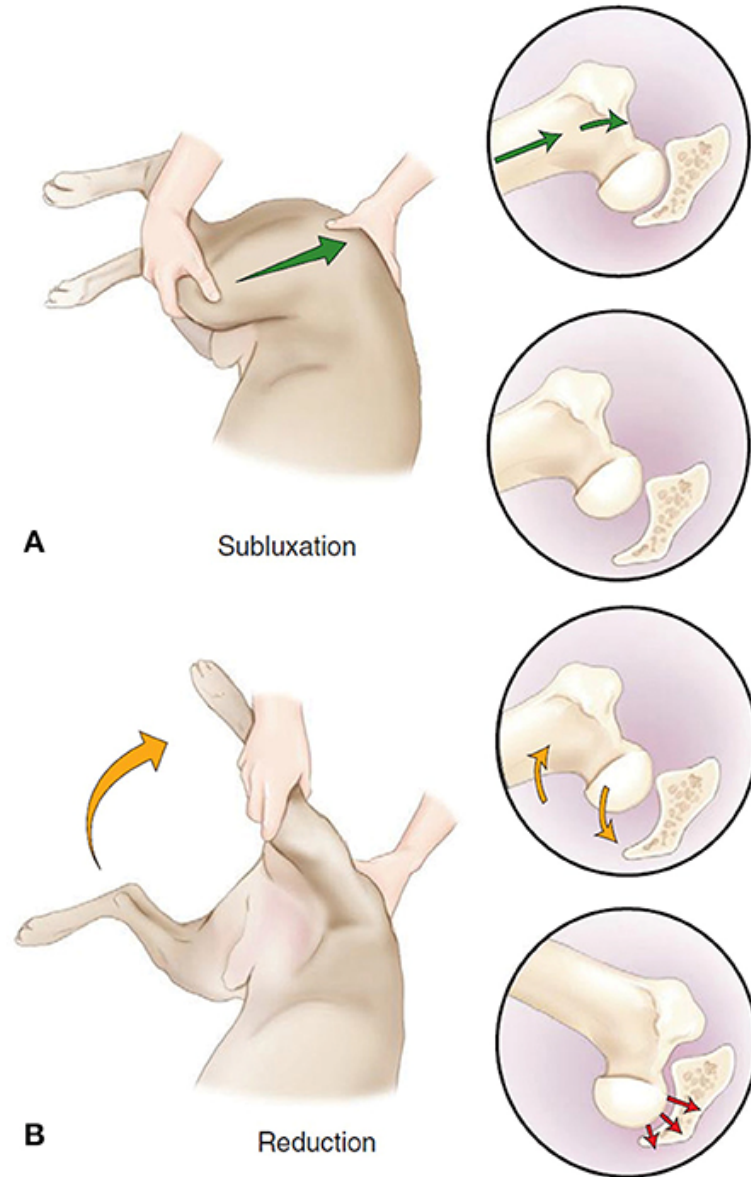
Patient History!

- Many pets have no clinical signs in the room; getting a good history can help you make a diagnosis; recommend radiographs
- Have client record videos (tell your receptionist to ask for videos when they are making appointments)



Ortolani Test

- Very sensitive for diagnosing hip laxity
- Difficult to complete when dogs are not sedated or under anesthesia
- Non-painful









Prevention of Hip Dysplasia

- Good genetics and selective breeding
- Decreased environmental factors
- PennHip or OFA screening



OFA

- The OFA classifies hips into seven different categories
 1. Excellent, Good, Fair (all within Normal limits),
 2. Borderline
 3. Mild, Moderate, or Severe (considered Dysplastic)

WWW.OFA.ORG

No certification program

- 4-23 month – preliminary
- 24 months and older can be certified
- VD pelvis only (hip extended)





PennHip Evaluation

- PennHip was developed as an early detection system to assess the risk of developing hip dysplasia
- Technique measures joint laxity (compression and distraction)
- Must be performed by a PennHip certified veterinarian or technician
 - Contact AIS to find a PennHip certified veterinarian
 - Yours truly.....



PennHip

- Radiographs are taken under sedation or general anesthesia (required)
- Minimum of 5 radiographs are recommended
- distraction Index (DI) calculated for each hip
 1. Standard hip extended (VD pelvis) – one radiograph
 2. VD pelvis – compression – one radiograph
 3. VD pelvis – Distraction – three radiographs



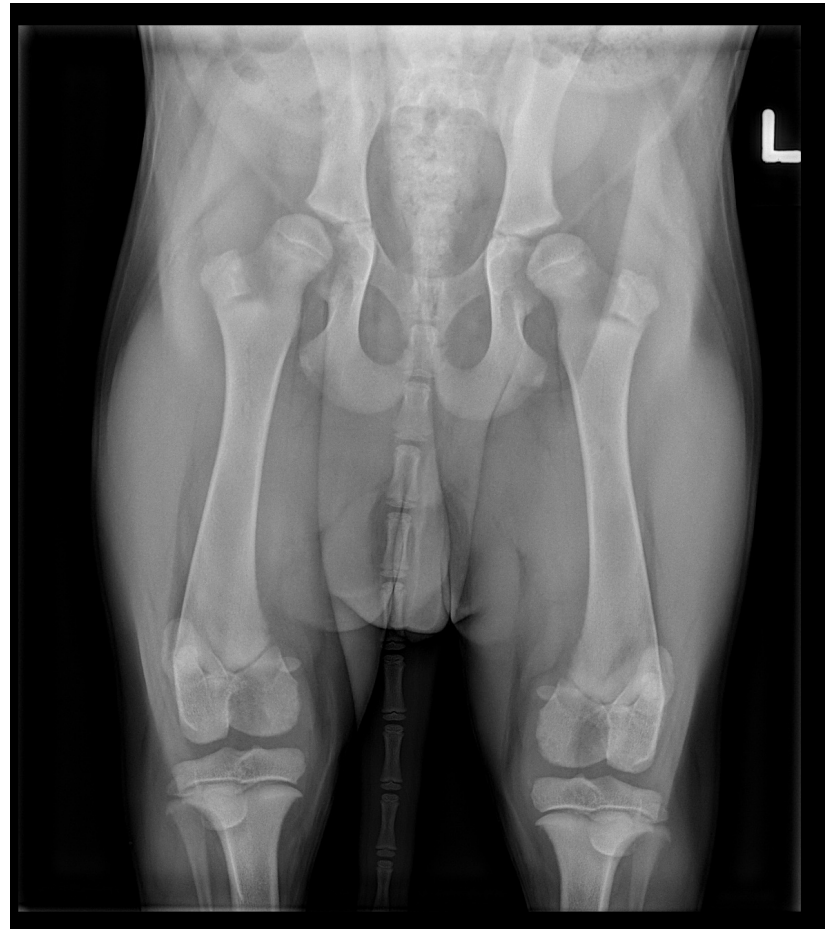


- Used to determine the associated risk factor for developing OA
- DI directly correlates to hip laxity
- Patients DI is compared to the breed (as per AIS data)
- Can be performed prior to 16 weeks but not included in breed data
- Older than 16 weeks – can be validated – included in breed data
- Radiographs can help offer JPS surgery (if needed)





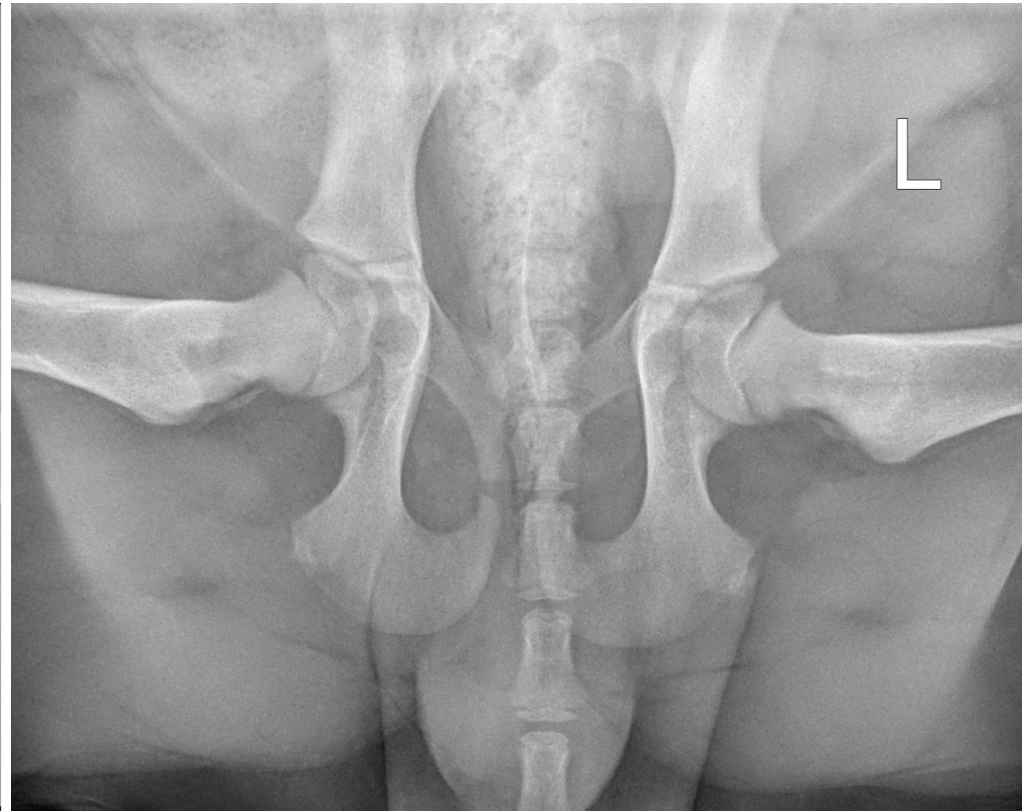
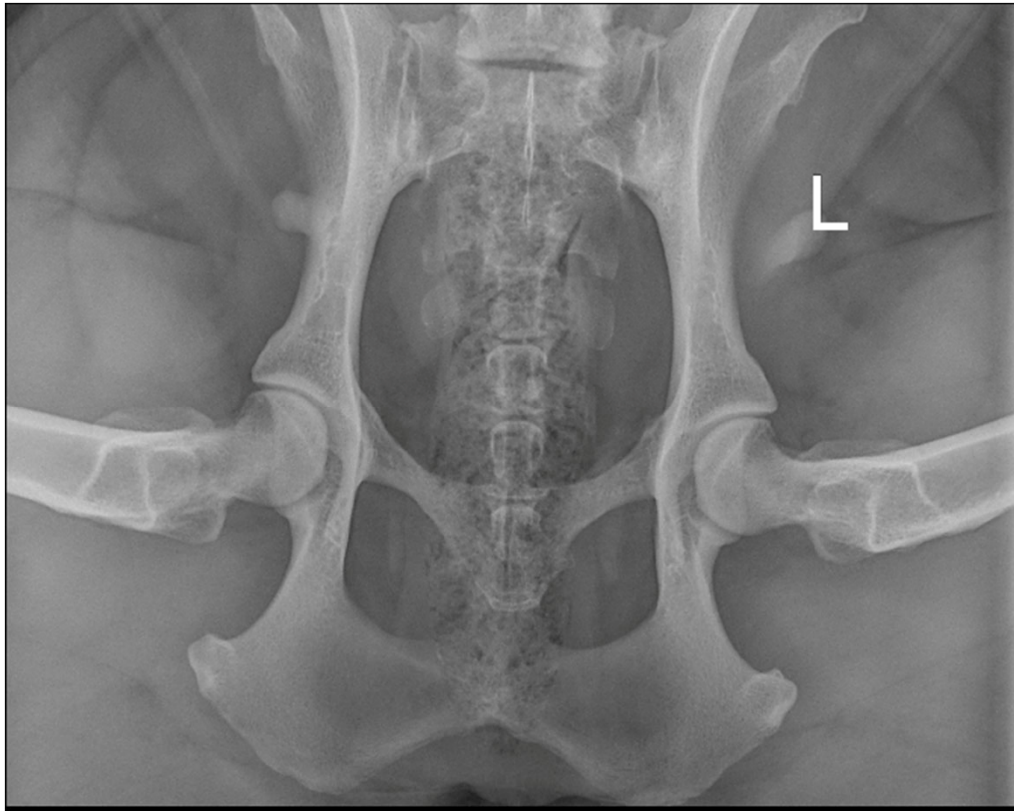
Hip Extended View – Supplemental Info



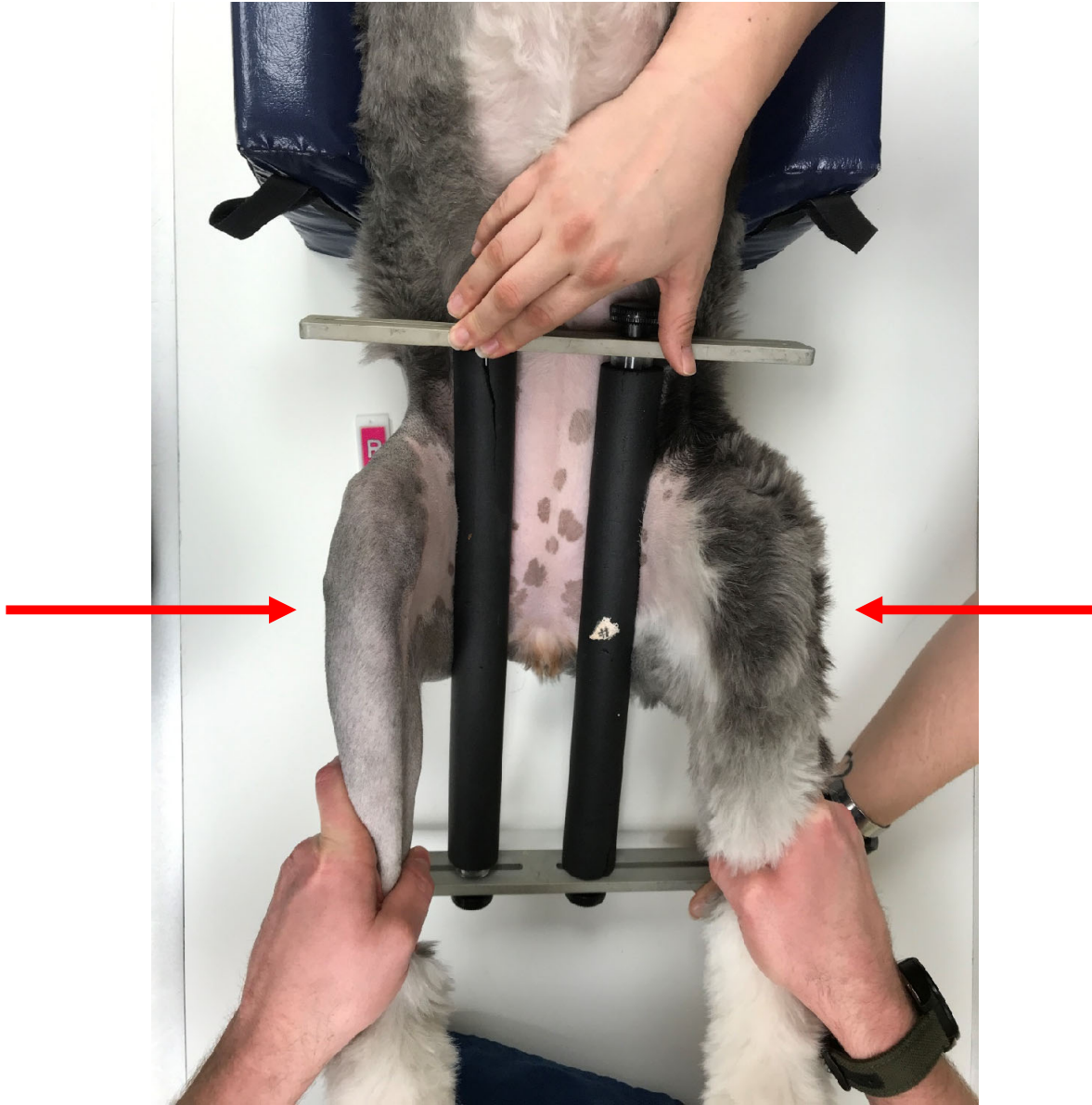




Compression

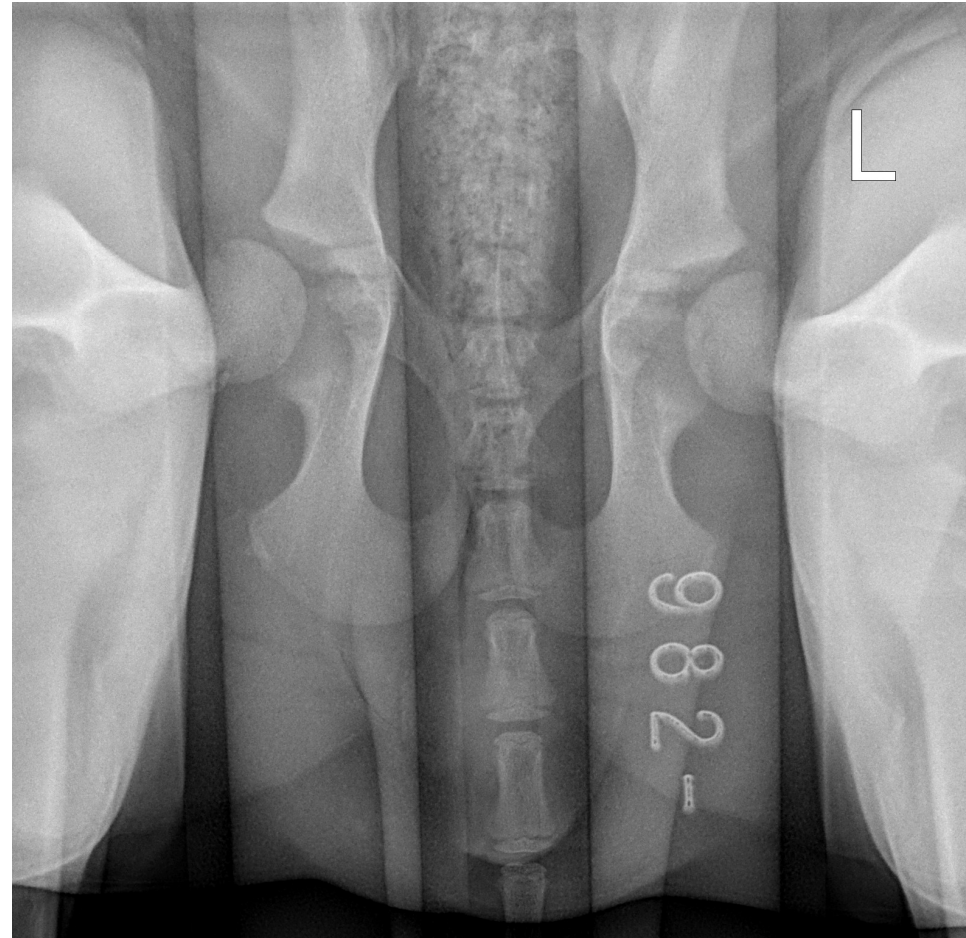
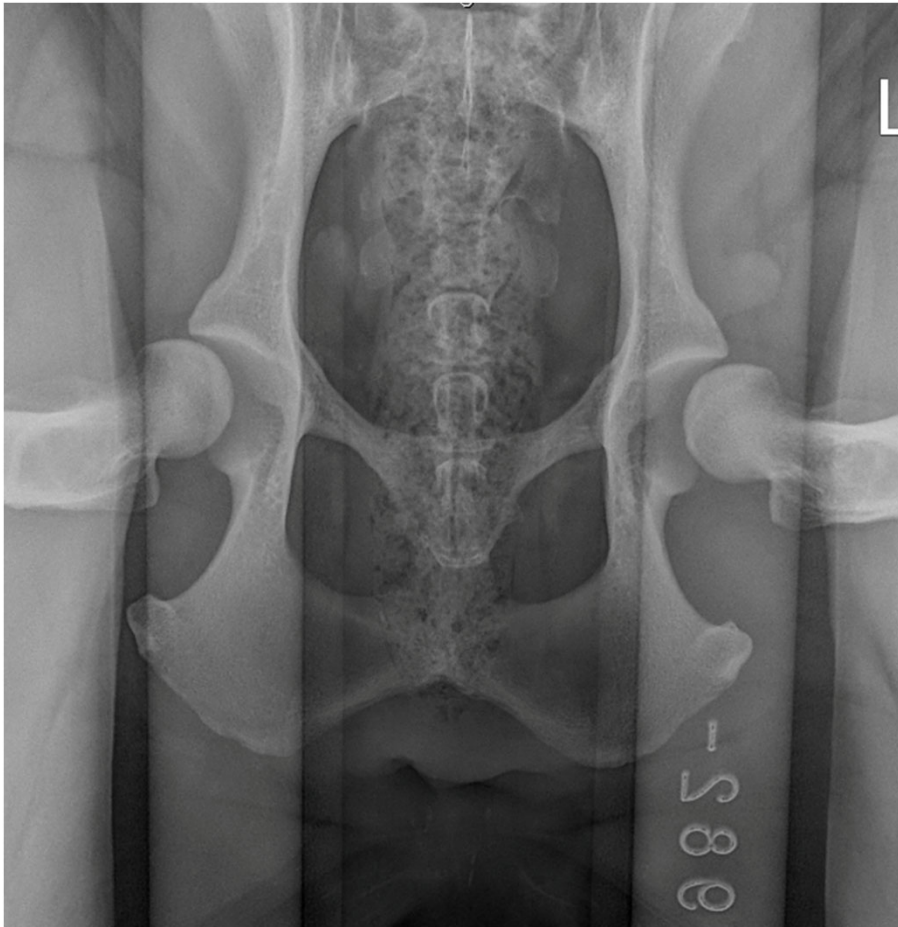


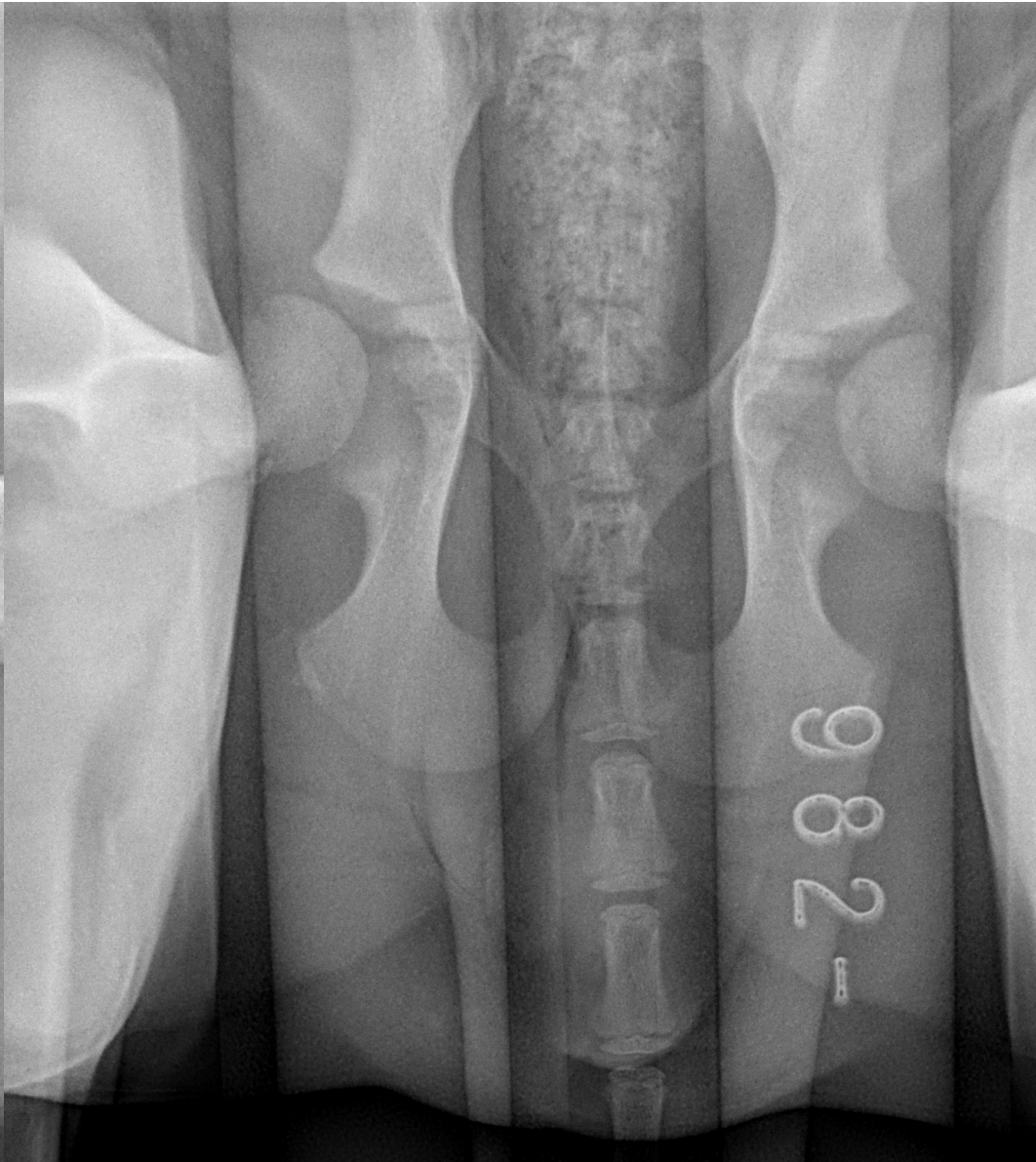
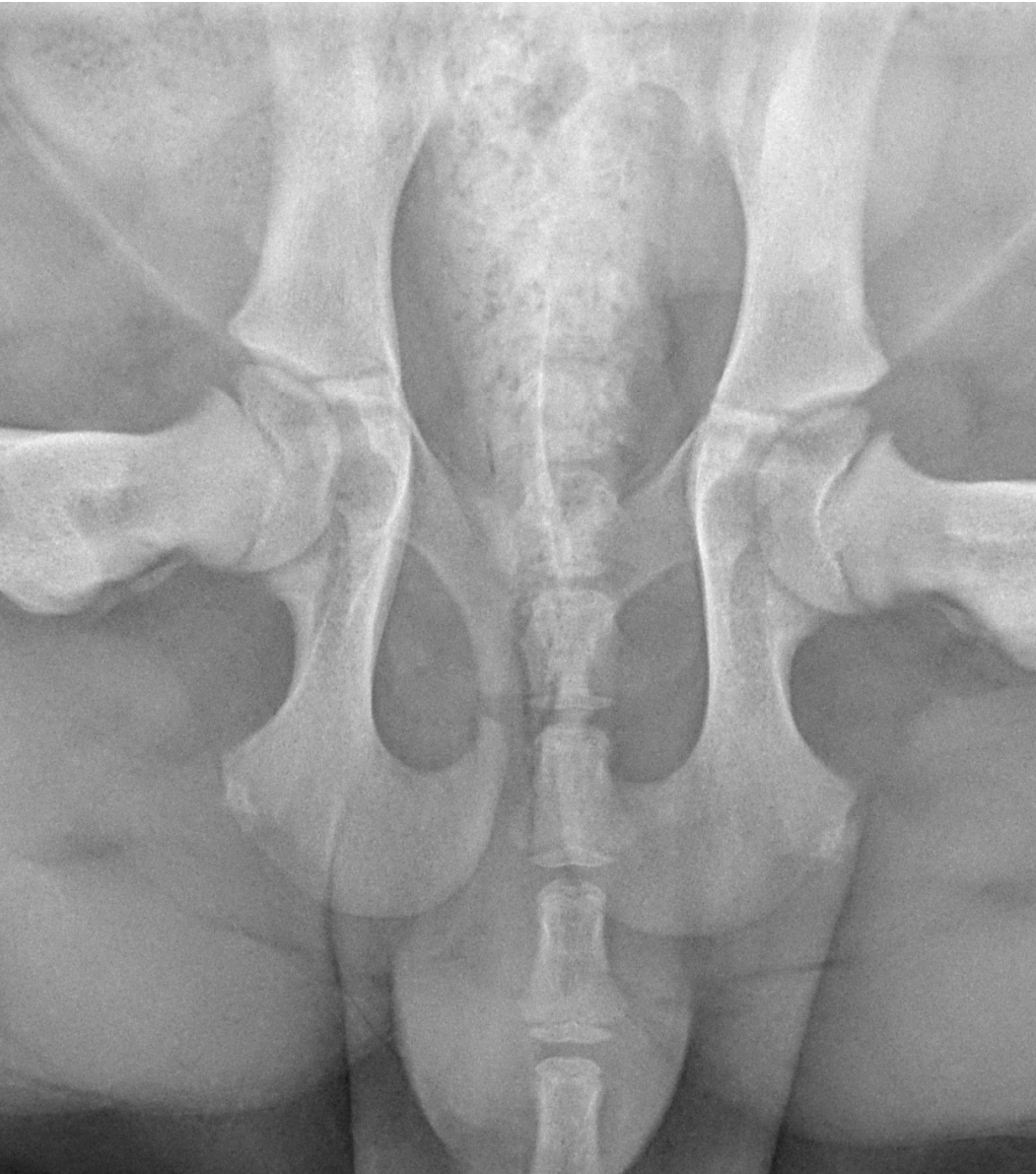


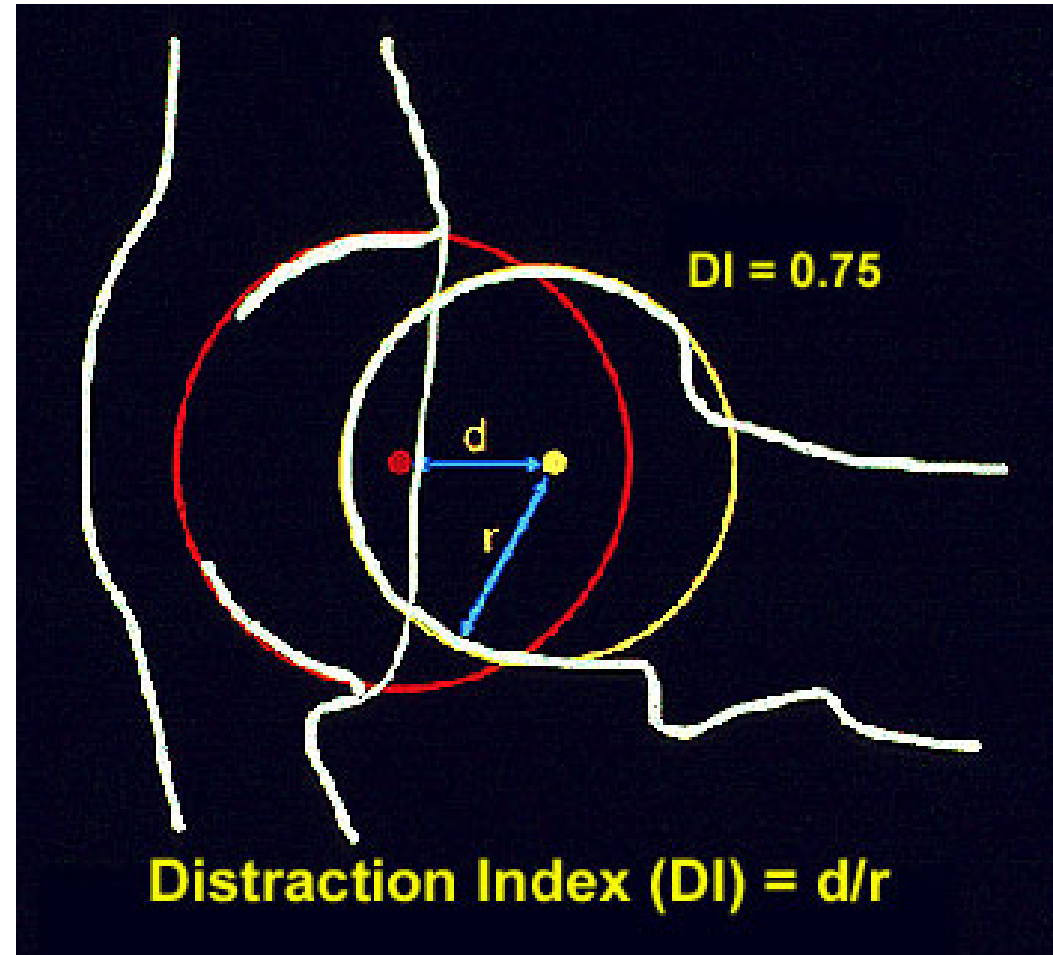




Distraction

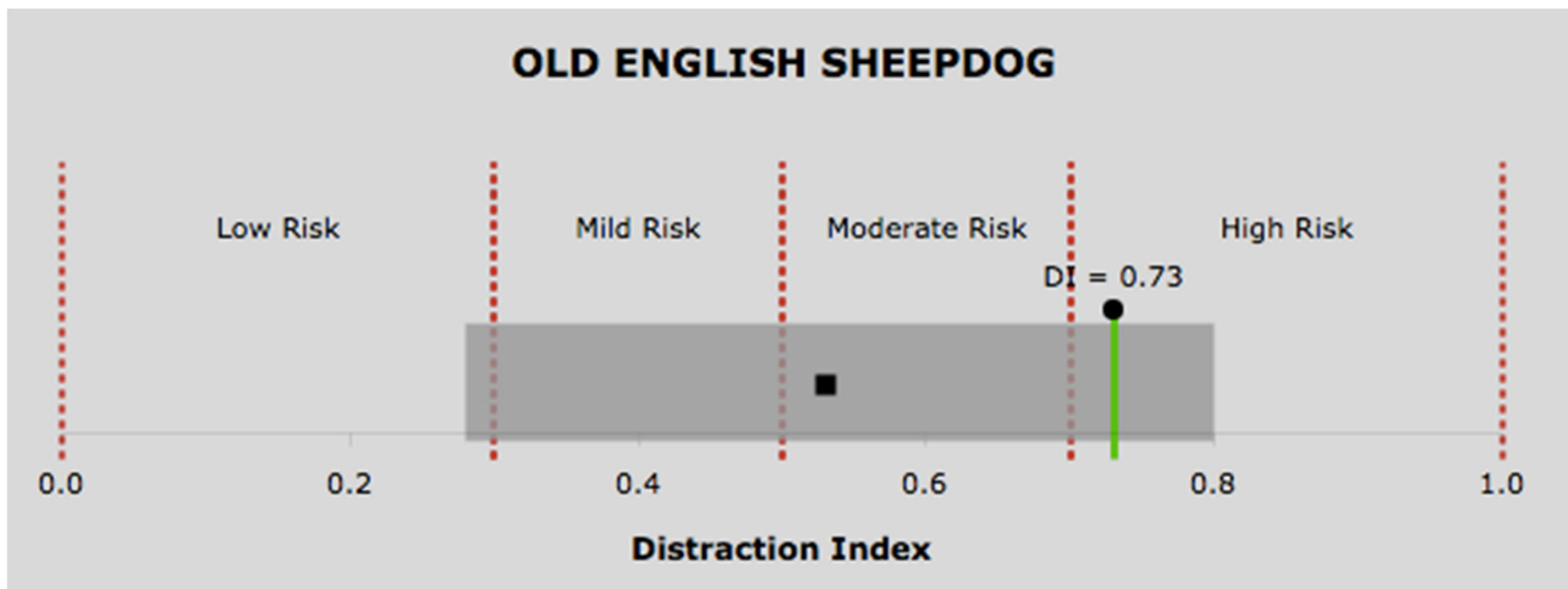








Results

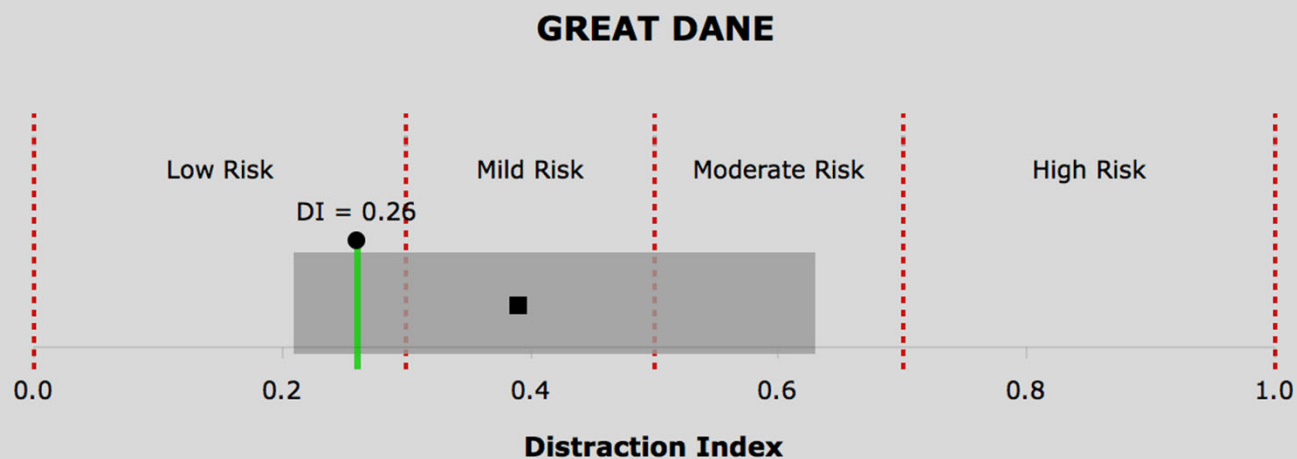




Distraction Index (DI):Right DI = 0.26, Left DI = 0.16.
Osteoarthritis (OA):No radiographic evidence of OA for either hip.
Cavitation/Other Findings:None.

Interpretation

Distraction Index (DI):The laxity ranking is based on the hip with the greater laxity (larger DI). In this case the DI used is 0.26.
OA Risk Category:The DI is less than or equal to 0.30. This patient is at minimal risk for hip OA.
Distraction Index Chart:





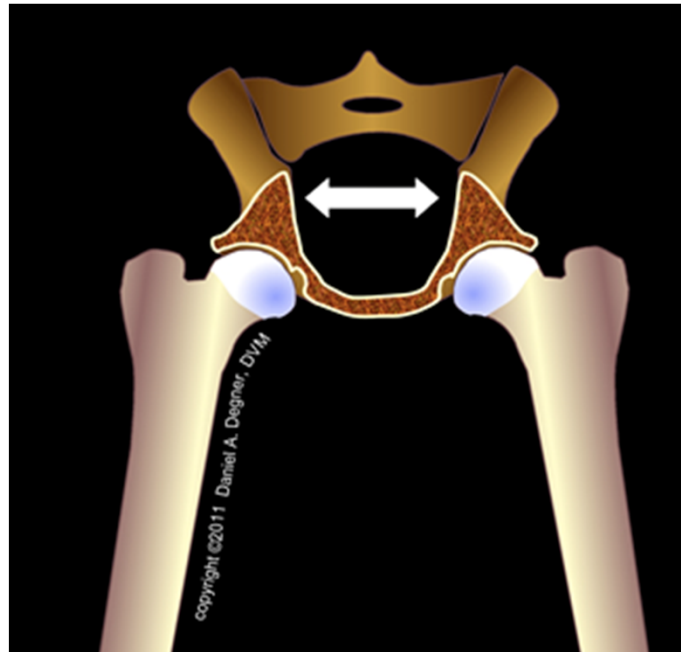
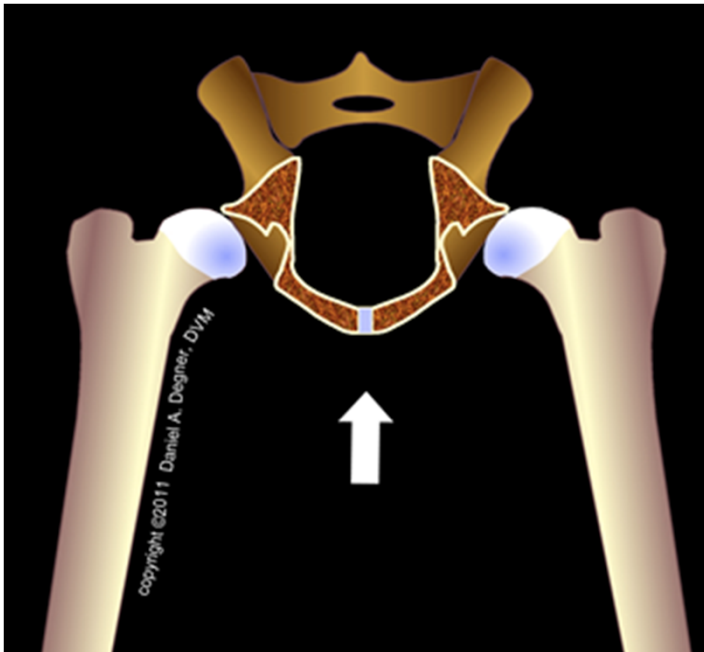
How to become certified??

- <https://antechimagingservices.com/antechweb/pennhip>
- “Free” and online training and certification
- Veterinarians and Technicians
- Benefits?
 - Better client education, early treatments, at risk dogs, breeding info

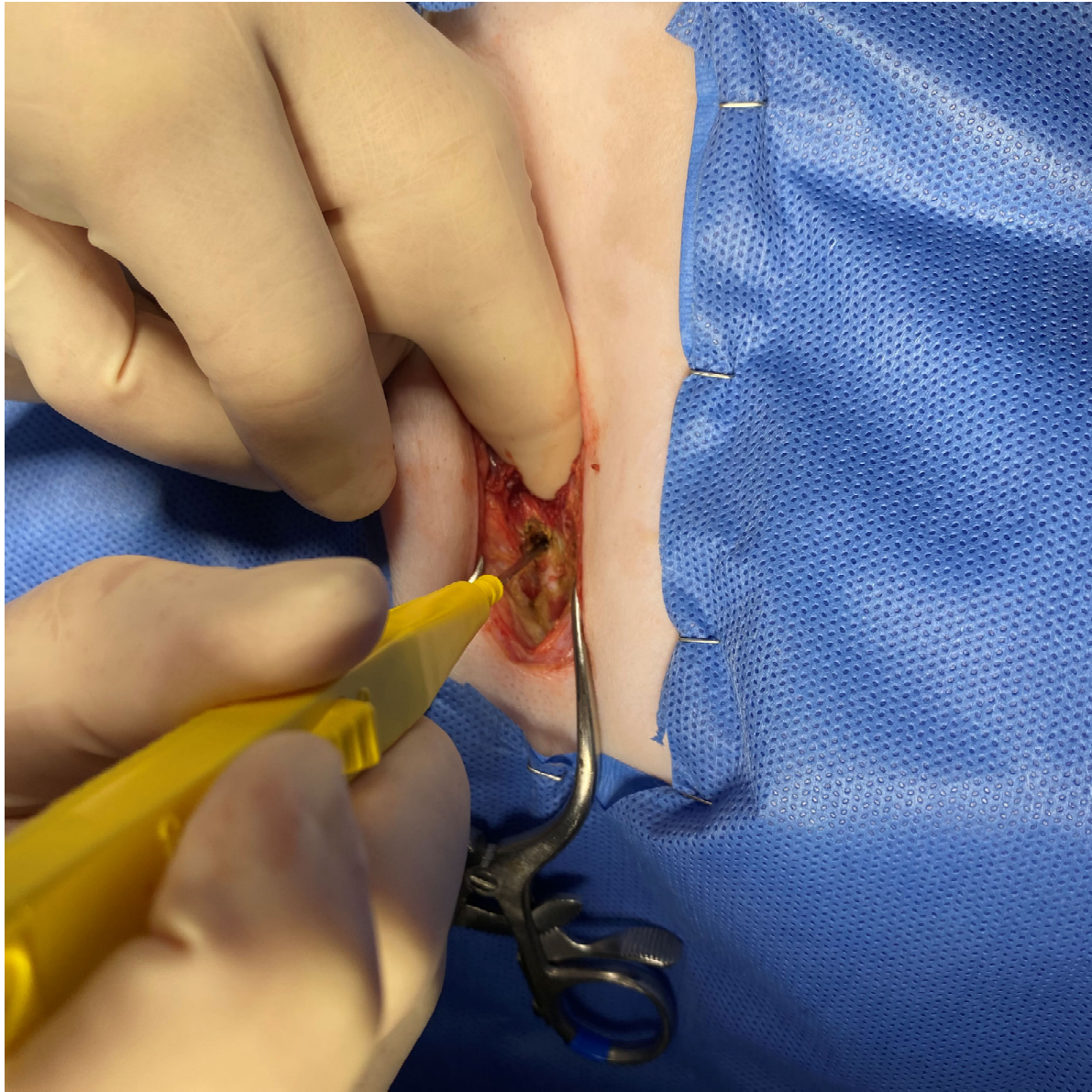


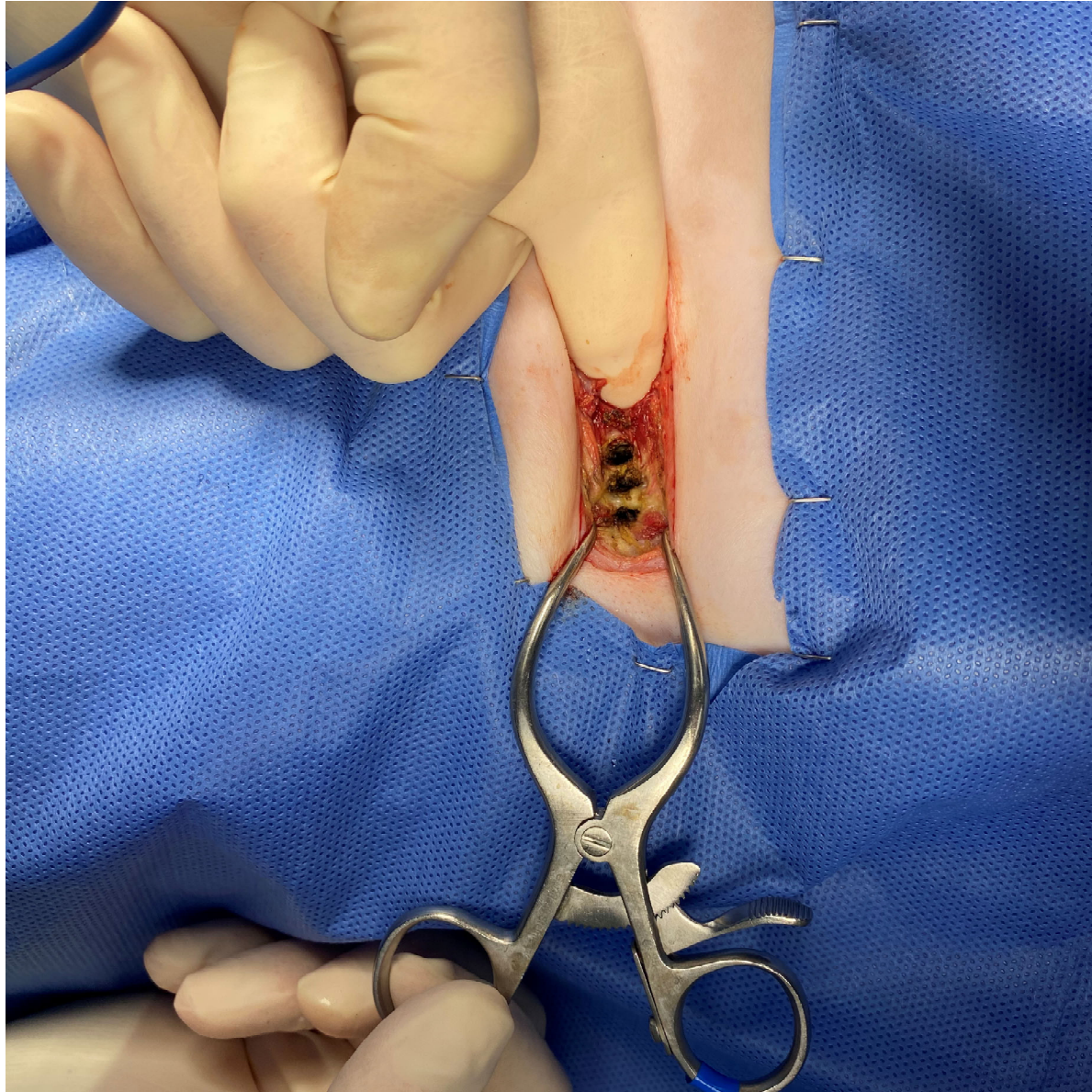
Juvenile Pubic Symphysiodesis (JPS)

- Completed around 16 weeks of age
- DI 0.4-0.7
- Cauterization of the pubic growth plate – halts growth



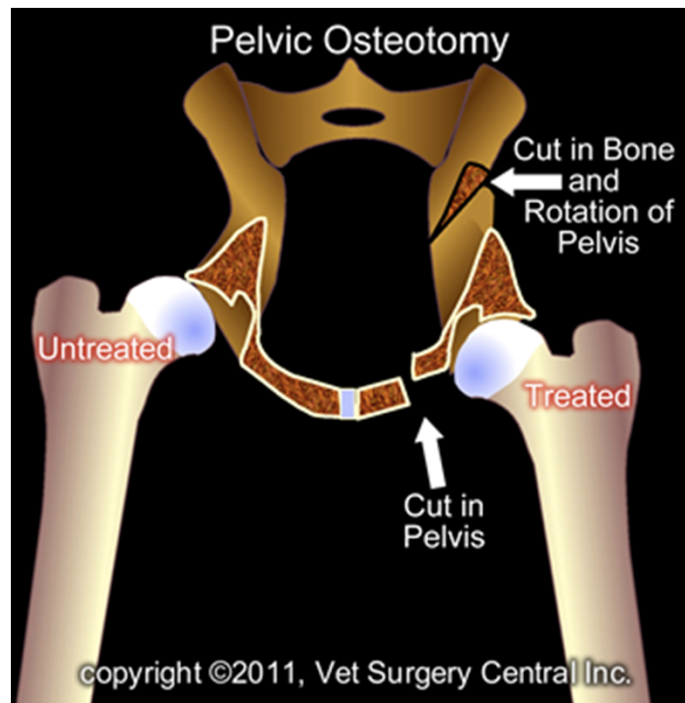
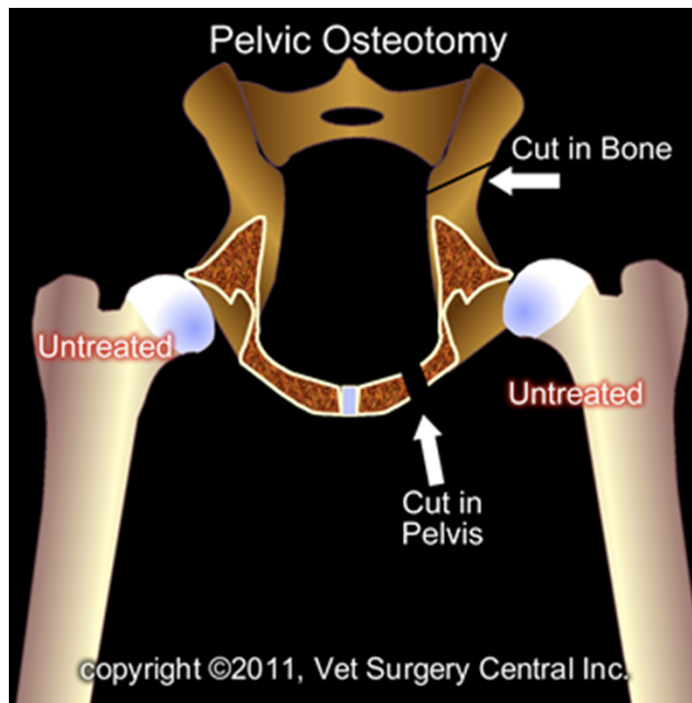


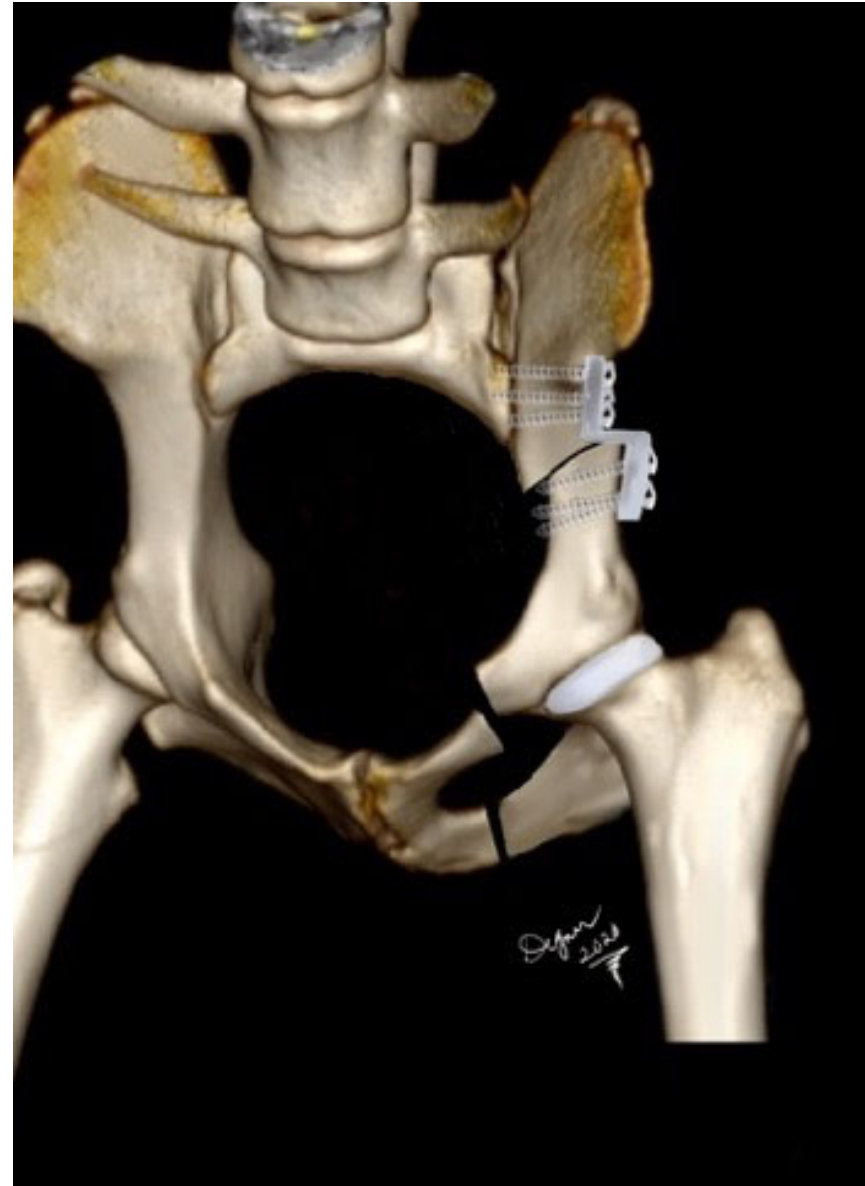
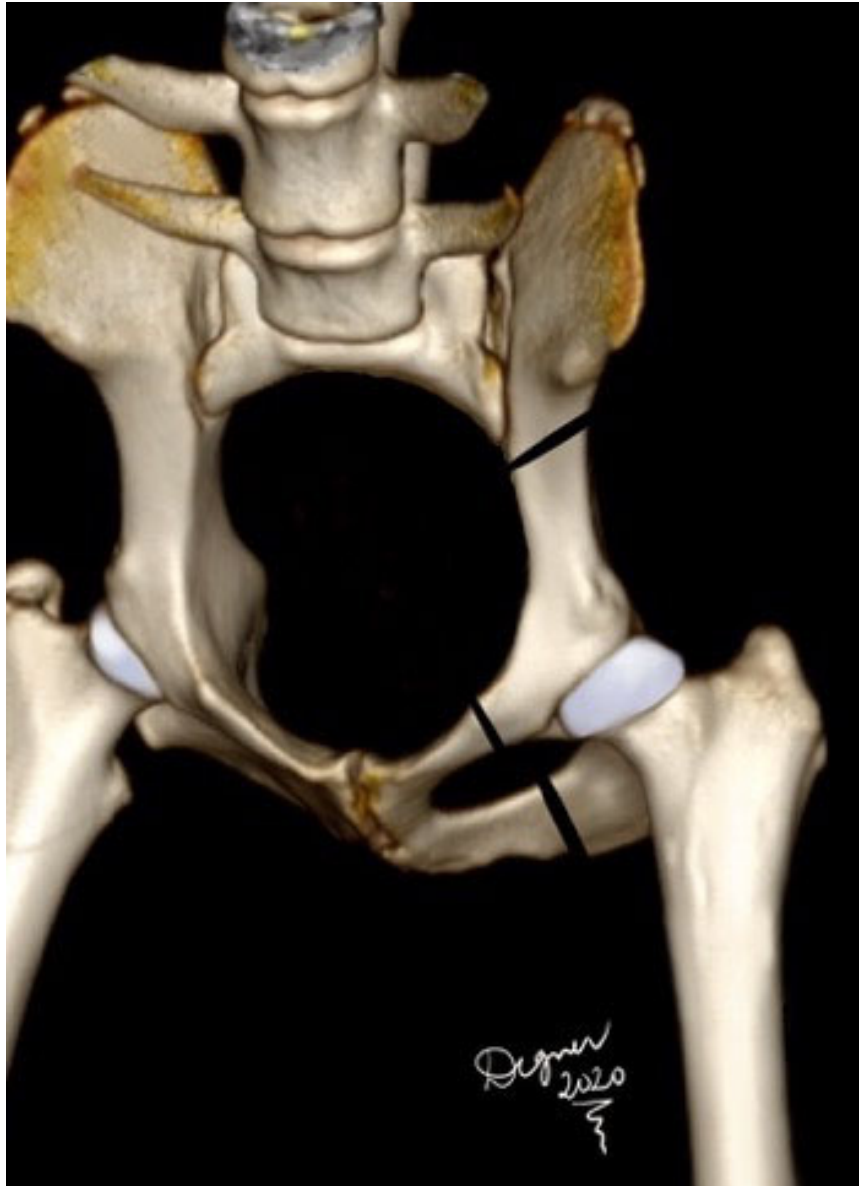


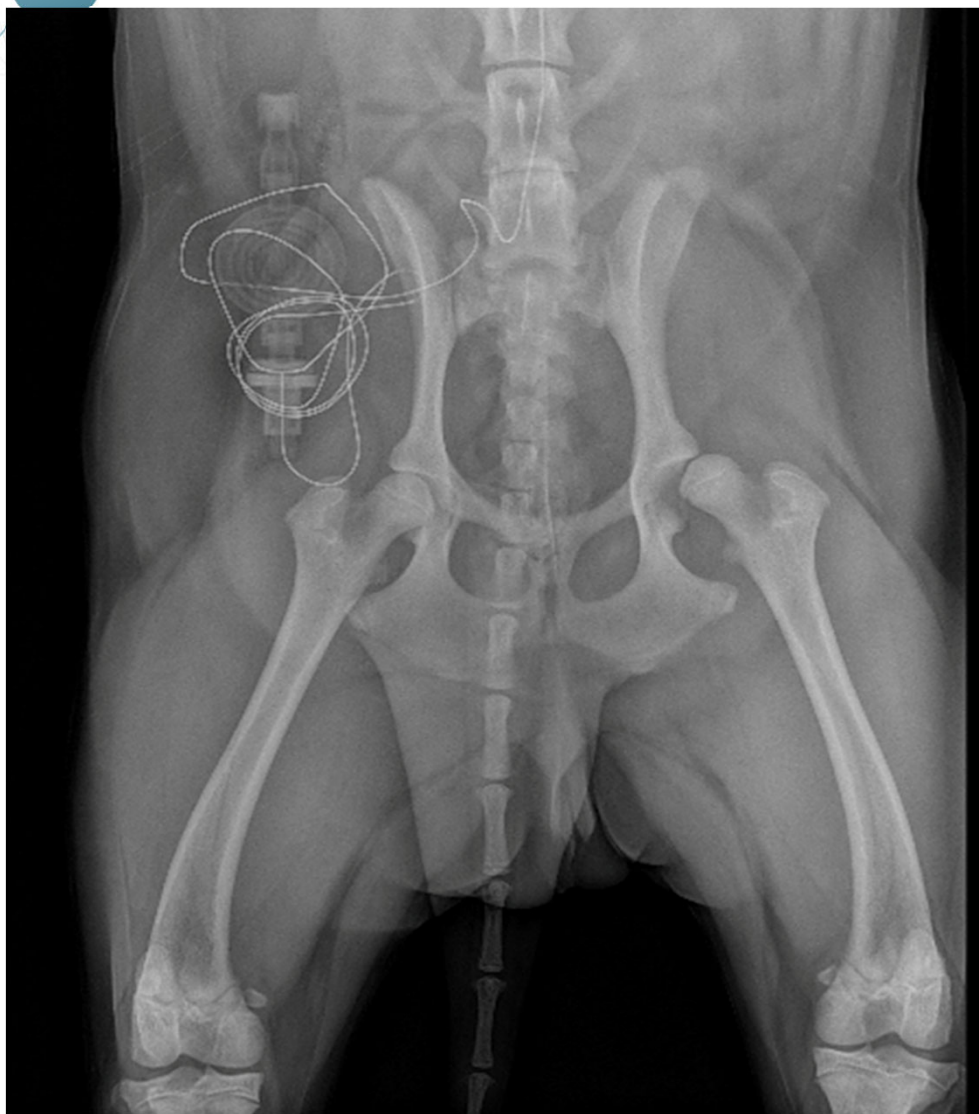


Triple Pelvic Osteotomy

- Used to increase coverage of the hip joints (acetabulum)
- Completed in dogs ~ 6-12 months of age – mature pelvis bone







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Medical Therapy

- Rest when lameness is seen
 - Controlled exercise
- NSAIDs (short term or PRN)
- Adequan[®]
- Weight loss
- Rehabilitation Therapy
- Oral supplements
- Intra-articular injections
 - PRP, Stem Cells, HA





Synovitin

- Radio-isotope therapy to relieve OA pain
- Intra-articular injection
- Up to 12 months of pain relief
- No systemic side effects
- Proven safe and effective
- www.synovitin.com
- Coming locally in 2023





FHO and Total Hip Replacement

- Treatment for end stage OA (failed medical therapy)
- Femoral Heal and Neck Osteotomy – small dogs, financial constraints
- Total Hip Replacement – smaller and larger dogs
- Cemented and Biological systems available





Total Hip Replacement

- Best chance for a full function for life
- First completed in 1974
- Many modifications made over the years
- Currently a cemented fixated and biologically fixated system
- 2 systems are most common
 - 1. Biomedtrix
 - 2. Kyon



BioMedtrix (Movera)

- Universal Hip
 - CFX (Cement)
 - Standard BFX (Biological)
 - BFX Lateral Bolt
- Micro/Nano
 - CFX (newly available BFX cups)





Kyon (Movera)

- Zurich Cementless THR
- Zurich Cementless small breed THR
- Zurich Cementless (Cupless)



Cupless
Hip Replacement



Total
Hip Replacement



Dual Mobility Cup for
high luxation risk patients



Templating

- Why?
 - Good indication of size, implant inventory, identify challenges
- Magnification marker needed (10mm)
- Overlay Technique
 - Clear plastic overlays – lay directedly on the radiographs
- Digital Templating

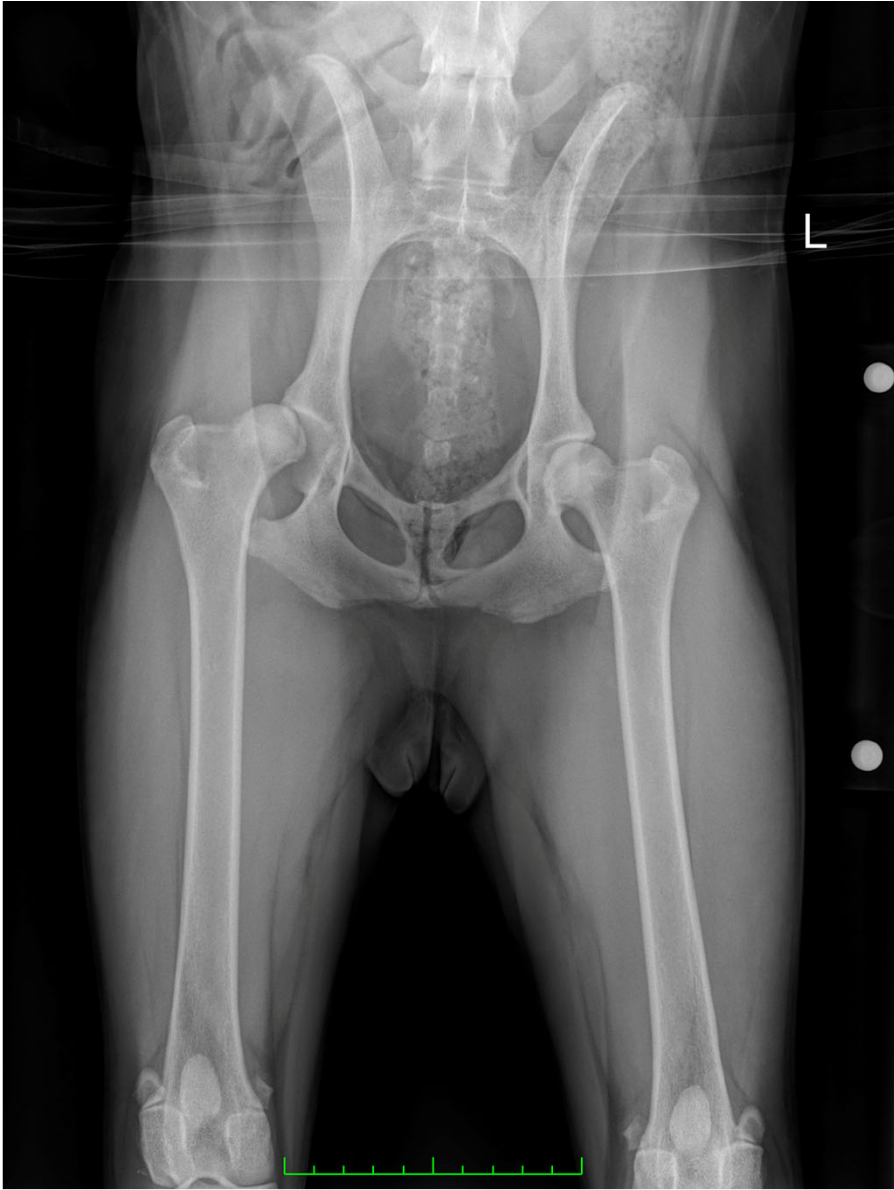


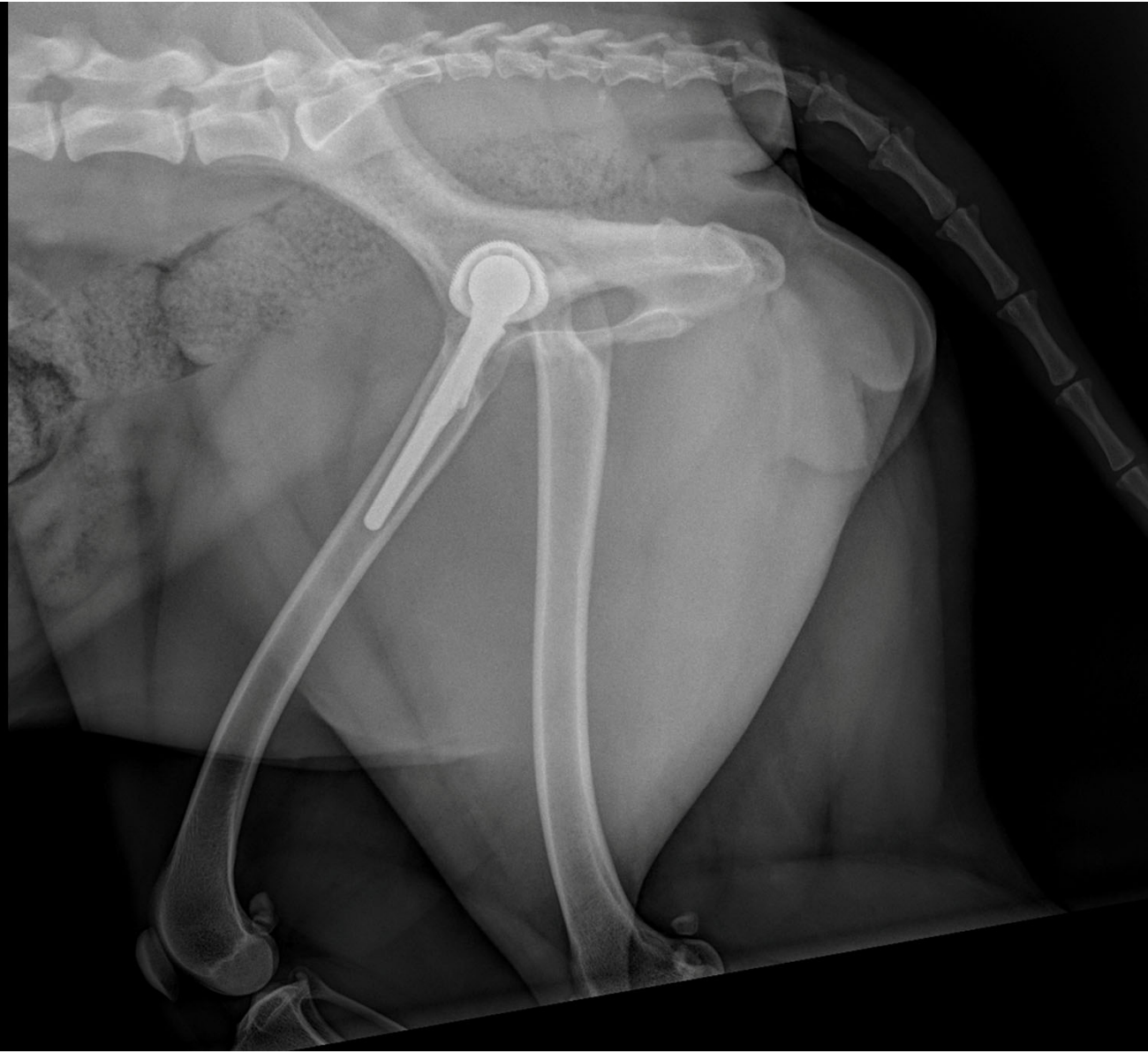
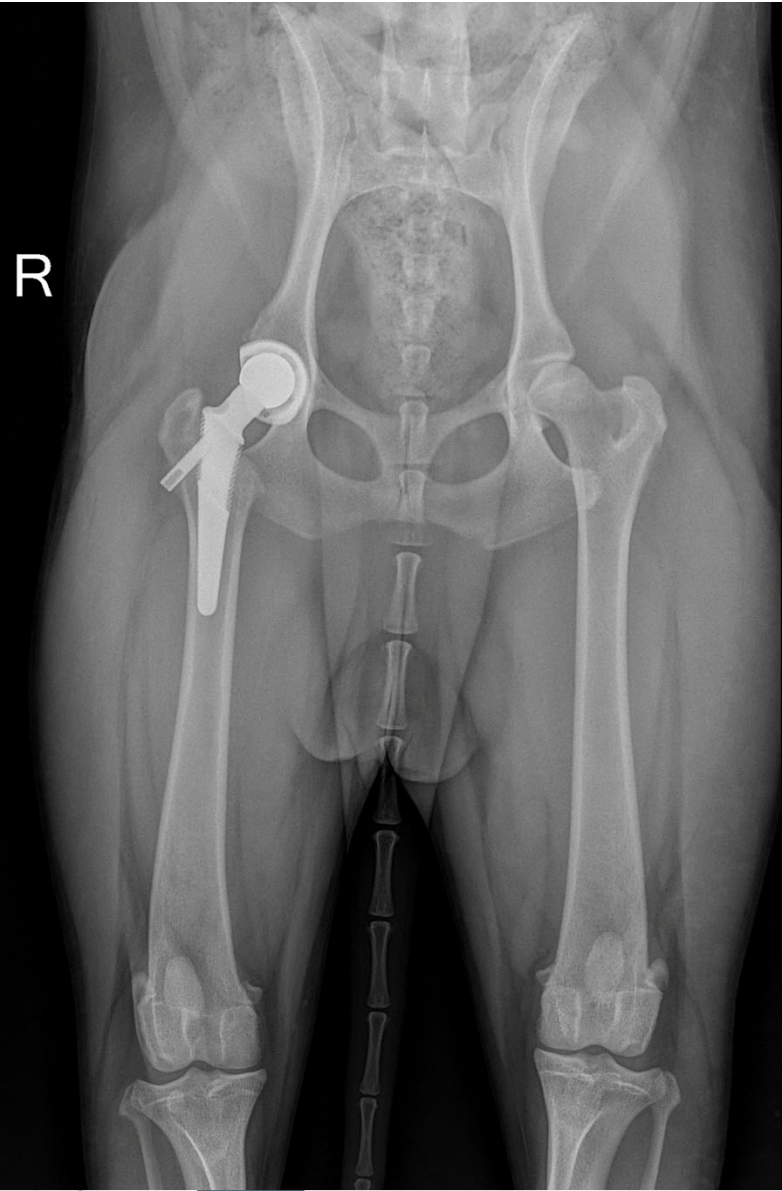


vPOP

- Digital planning
- \$125 a year
- Online app
- Most of the veterinary orthopedic implants available









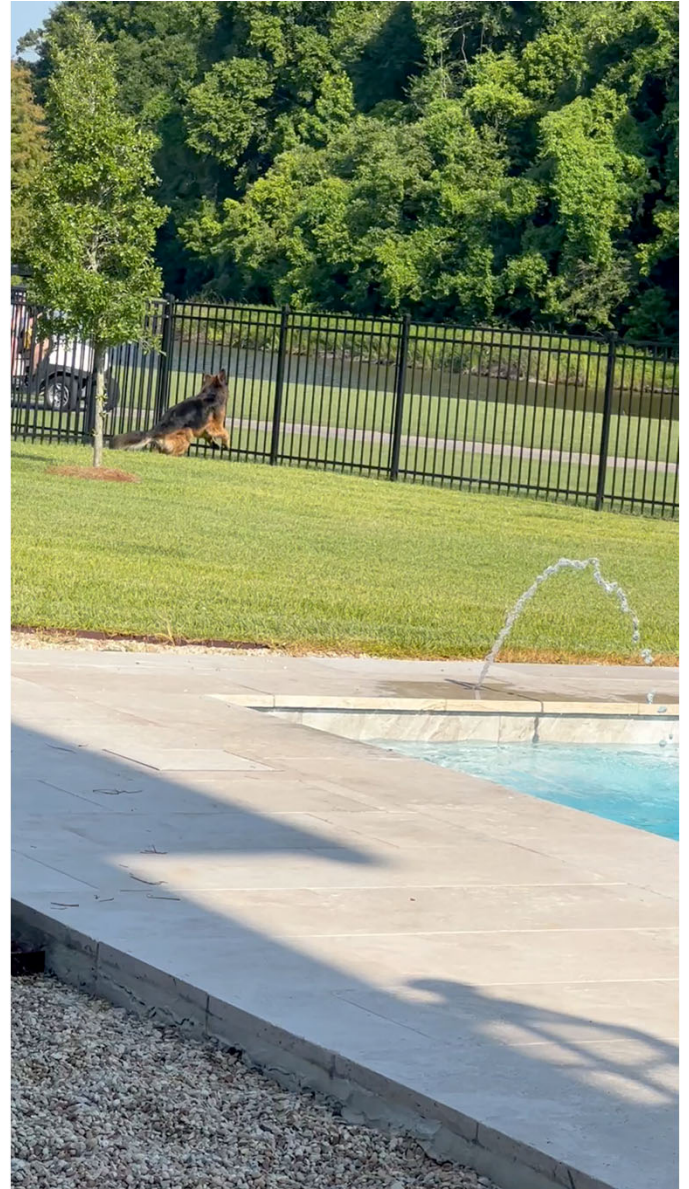
Two Hours Post-Op





Post-op Recommendations

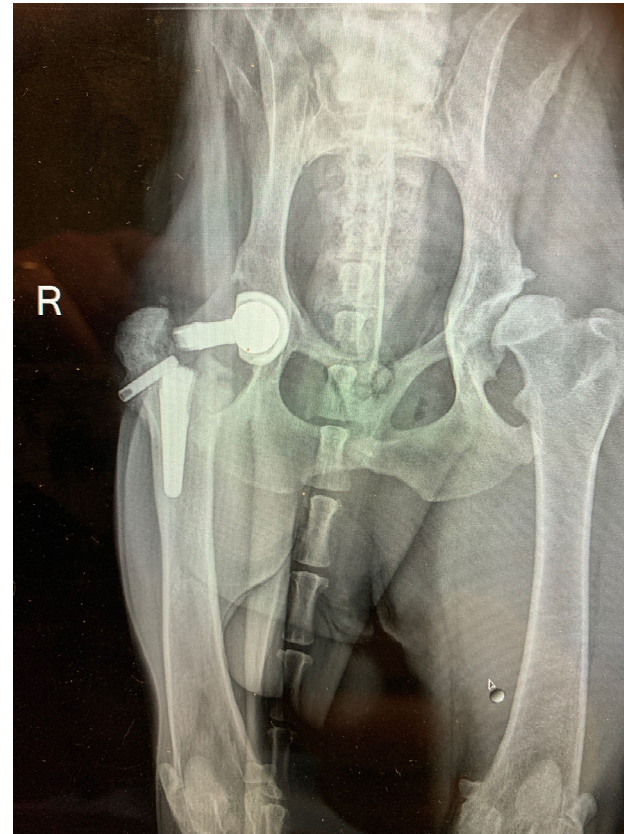
- Similar to any other orthopedic surgery
- 2 weeks of strict kennel rest, sling walks, on leash
- Recheck at 2 weeks (incision and PR)
- 2-8 weeks post-op – 10-15 minute walks three times a day, rehabilitation (at home or professional), continued rest
- 8 weeks recheck radiographs
- Slow return to normal over the next 4 weeks





Complications

- Luxation
- Fracture
- Infection
- Implant failure
- Integration failure







Case Examples

- Heidi
- Dolly
- Rocky
- Teddy
- Camo



Heidi Agusti

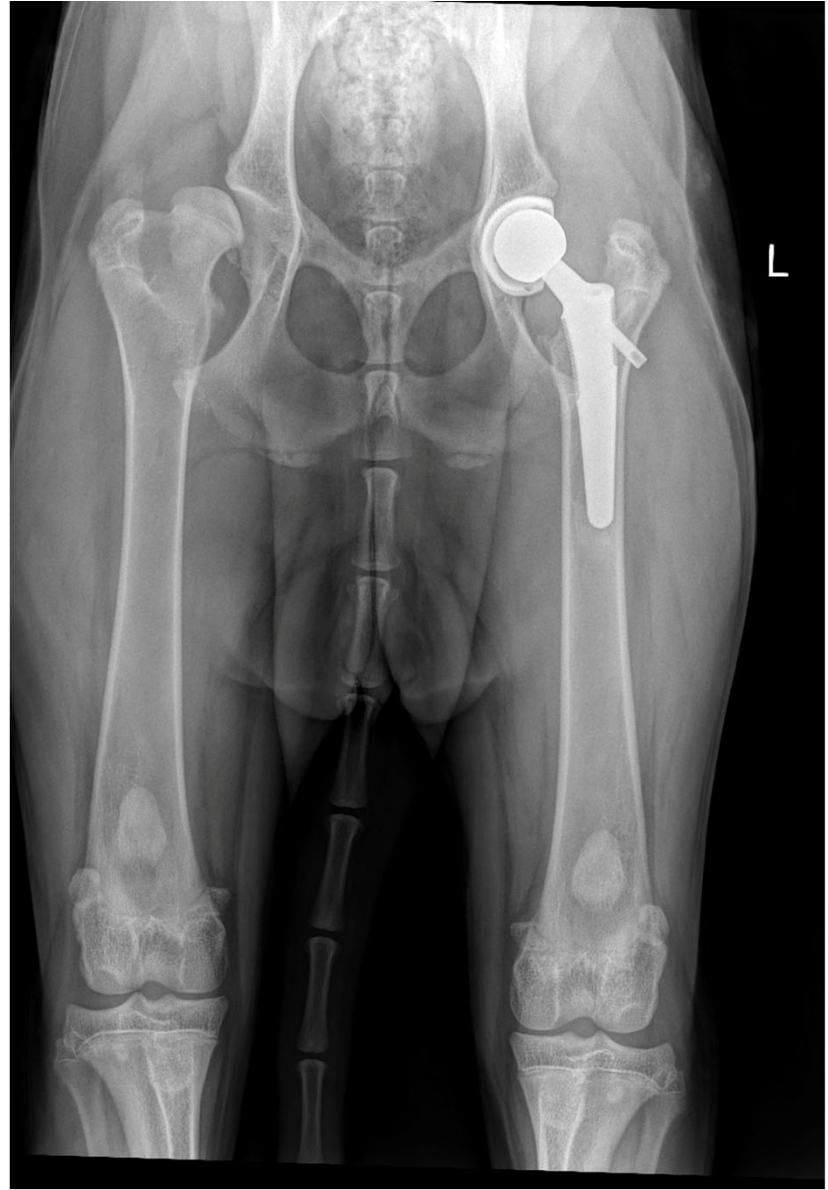
- 8M F Saint Bernard
- 2 month history of mild LH lameness (severe the last 2 days)
- Sent from RP for luxation
- Severe pain and crepitus on manipulation
- Decreased ROM

Discussed THR and FHO

THR was elected – completed at 8 months due to luxation

*Care was taken on retraction – trochanter growth plate

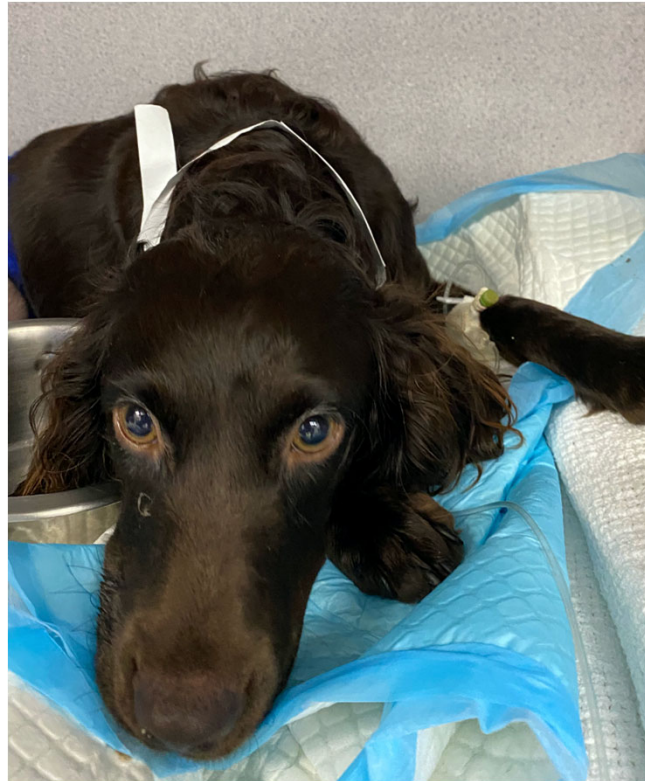
→ THR Has been done as early as 6 months





Dolly Martin

- 6M F Boykin Spaniel
- Hit by car







List of injuries....

1. Right craniodorsal hip luxation
2. Right Ilium fracture
3. Left SI
4. Sacrococcygeal fracture-luxation
5. Ischial and pubic fractures
6. Poor acetabular coverage of the left hip

Where do we start.....



Treatment Completed

- Left SI (Minimally invasive lag screw placement)
- Right Ilium (2.7mm 35 degree TPO plate)
- Right open hip reduction (primary capsular repair)
- Right open hip reduction (primary capsular repair)
- Ischial and public fractures: no treatment required
- Sacrococcygeal fracture-luxation: no treatment required







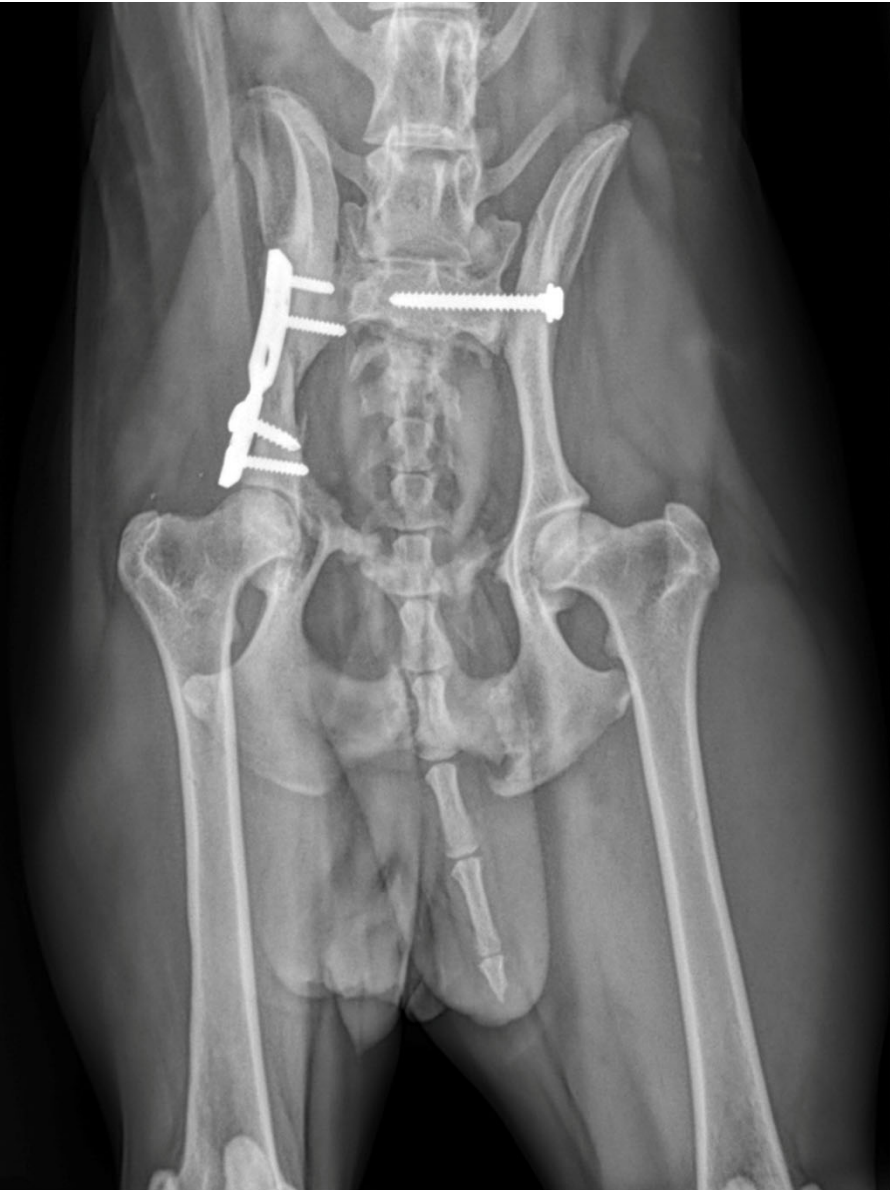








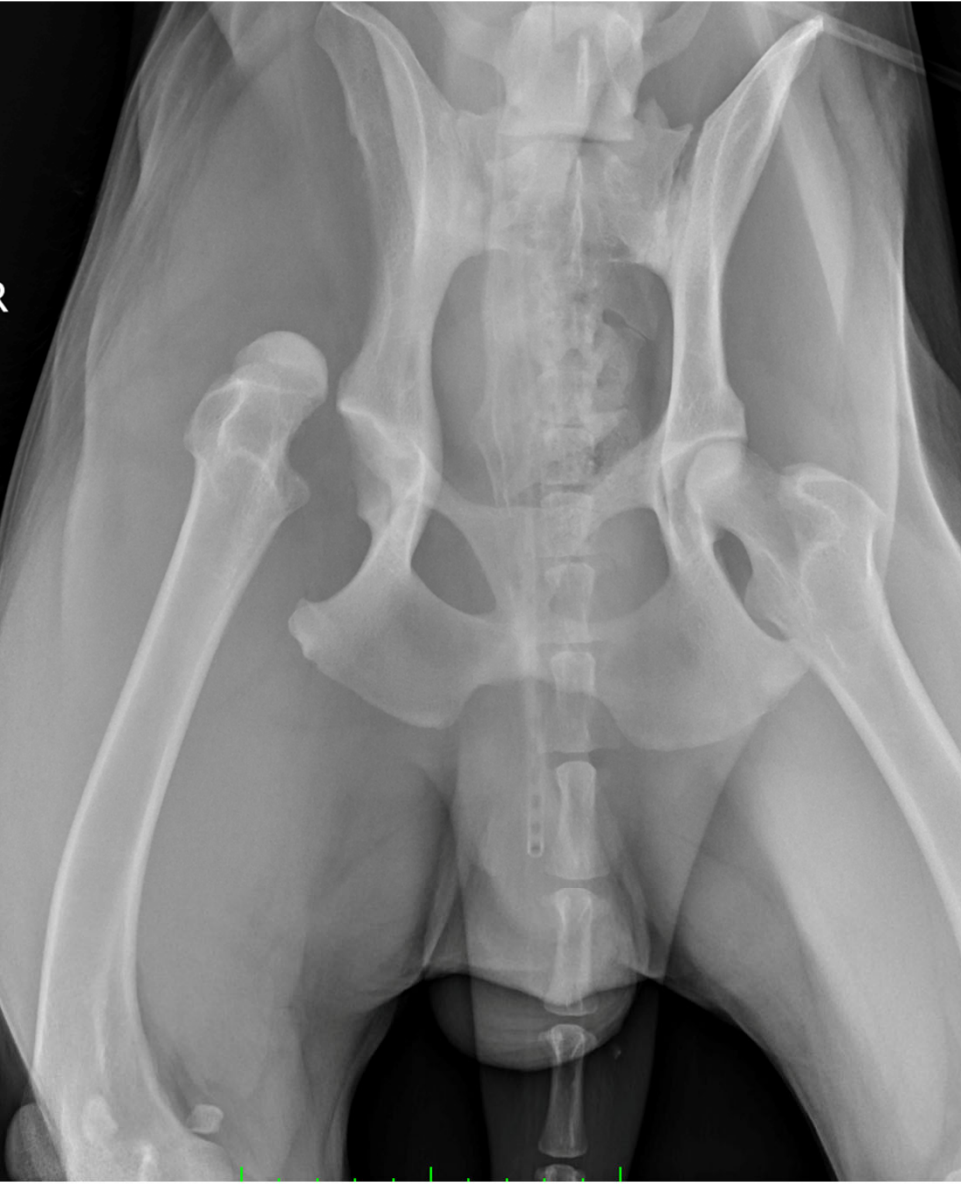






Rocky C.

- 3-year-old MN German Shepherd
- HBC
- Right craniodorsal hip luxation
- Wounds on both tarsi
- Closed reduction unsuccessful (why???)
- Hip would not stay in place – Next step?









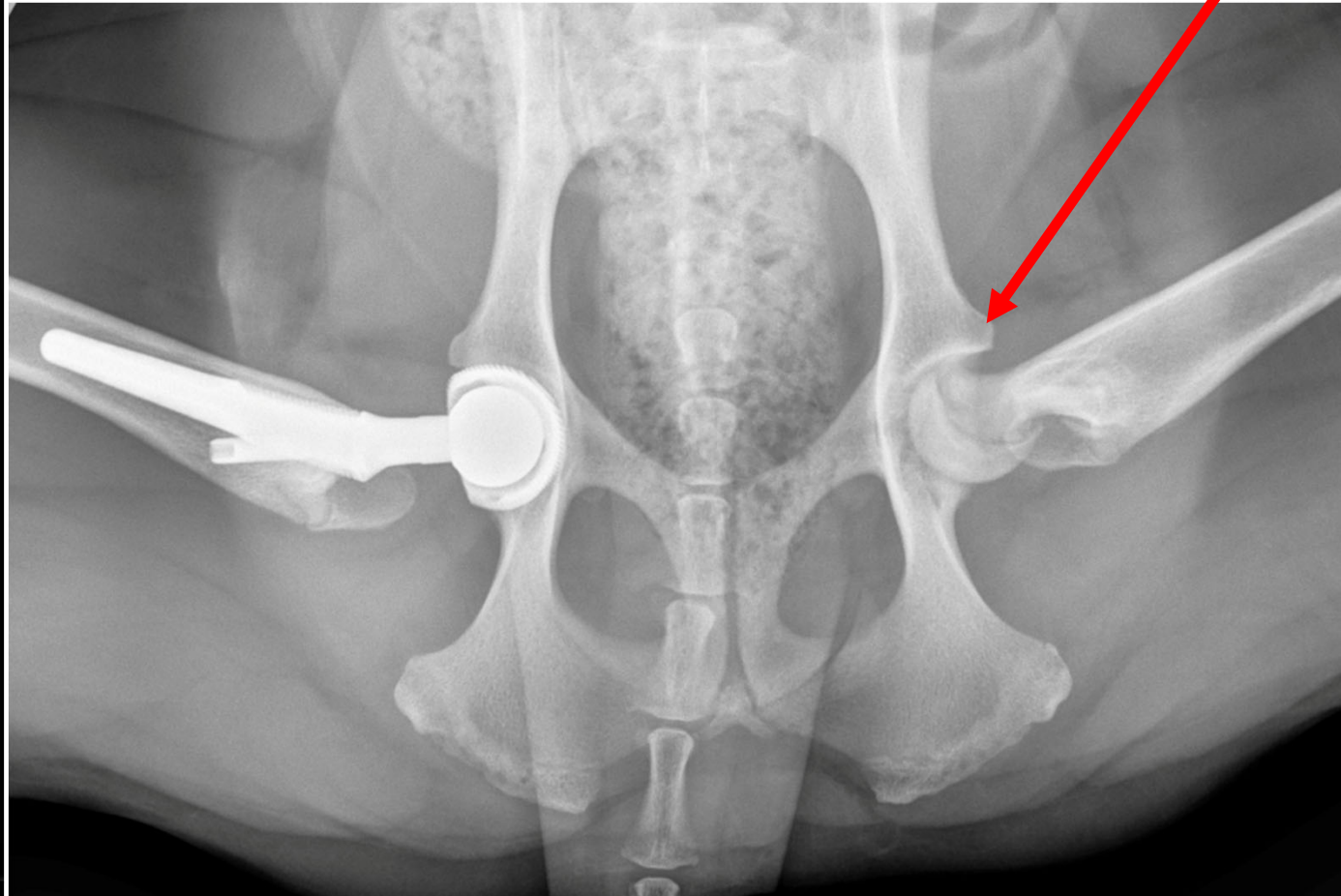
Teddy B.

- 10-month MN German Shepherd
- Unknown moderate right hind lameness noted (2 weeks duration)
- Pain on hip manipulation





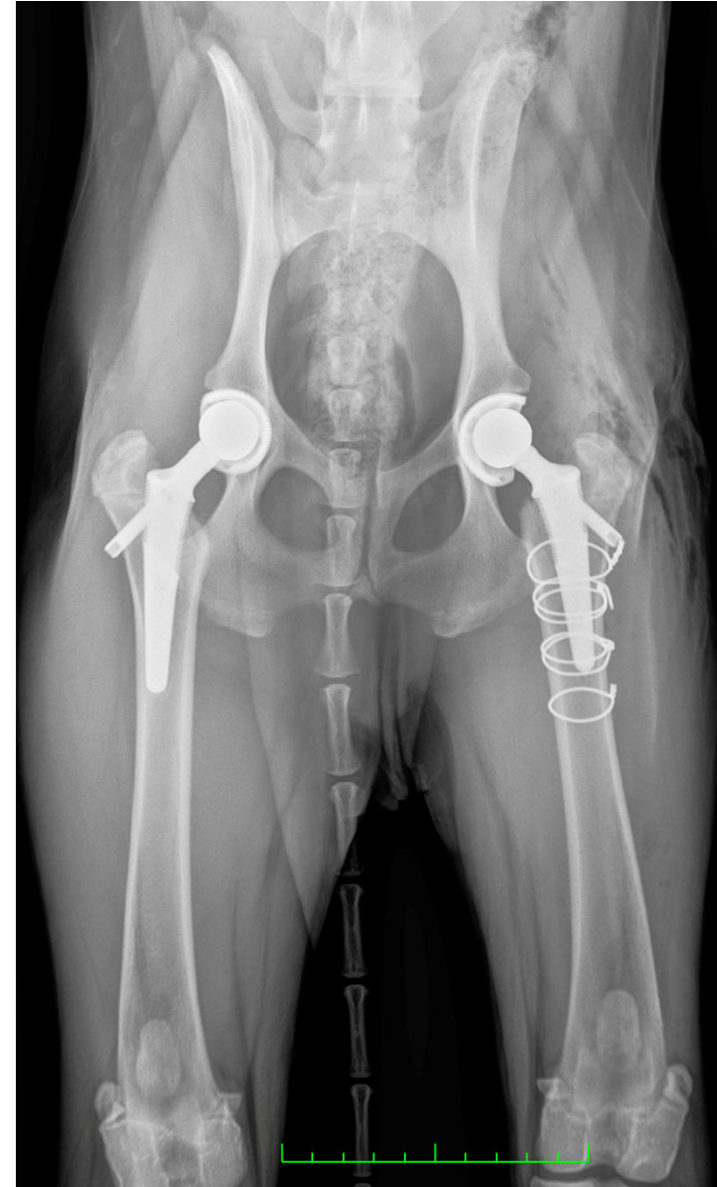
4 weeks later – LH lameness....





Why?

- I don't think this is hip dysplasia
- Canine Physeal Dysplasia?
- Feline physeal dysplasia is a disease that causes
- Is this hip dysplasia





Camo

- 1.5yr MN Newfoundland mix
- 8 month history of bilateral hind limb lameness
- Came from Georgia for an evaluation and THR
- Severe pain on manipulation
- Decreased ROM bilaterally

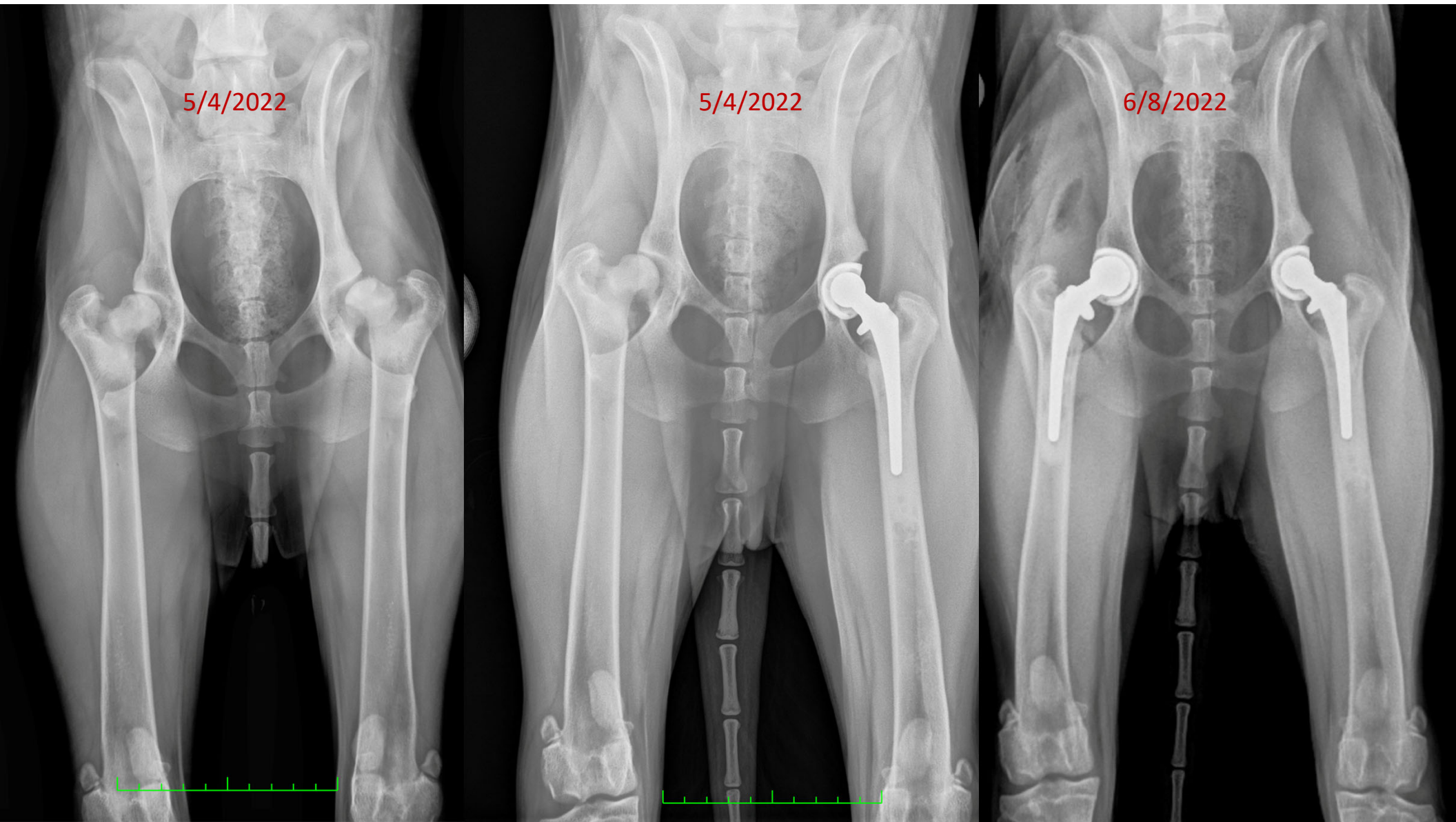
Discussed THR and FHO

- THR was elected (hybrid)

5/4/2022

5/4/2022

6/8/2022





Indications for THR

- Hip dysplasia (most common)
- Hip Luxation
- Fractures
- Aseptic necrosis of the removal head
- Neoplasia (experimental)



Questions?

- Cody Doyle (MedVet Mandeville)
- Email: cody.doyle@medvet.com
- Cell: 810.922.8698

Contact me with any rads or cases at any point, any time!