OCD IN THE STANDARDBRED

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PEI Standardbred Breeders Conference

Feb 2023

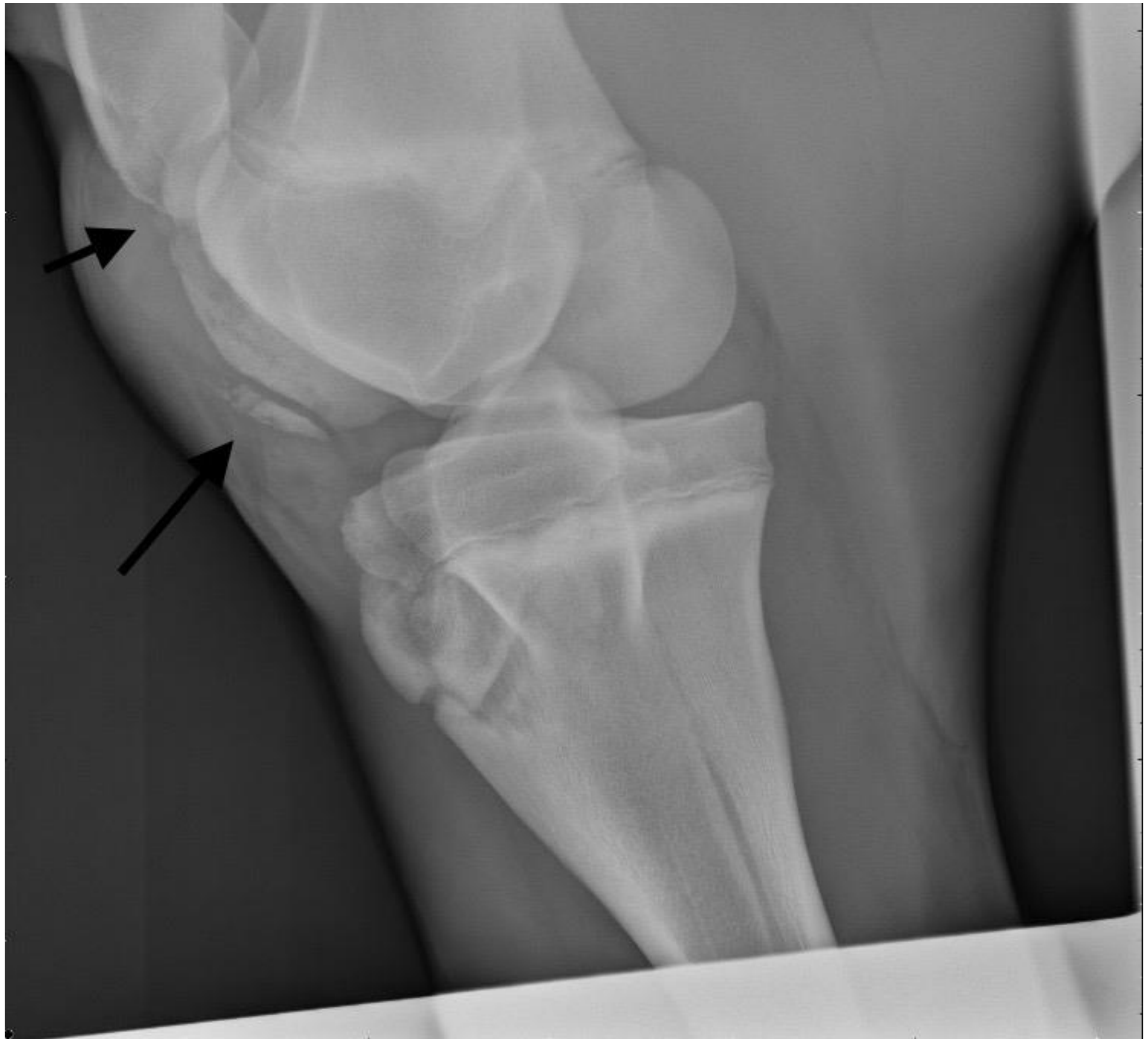
WHAT IS OCD?

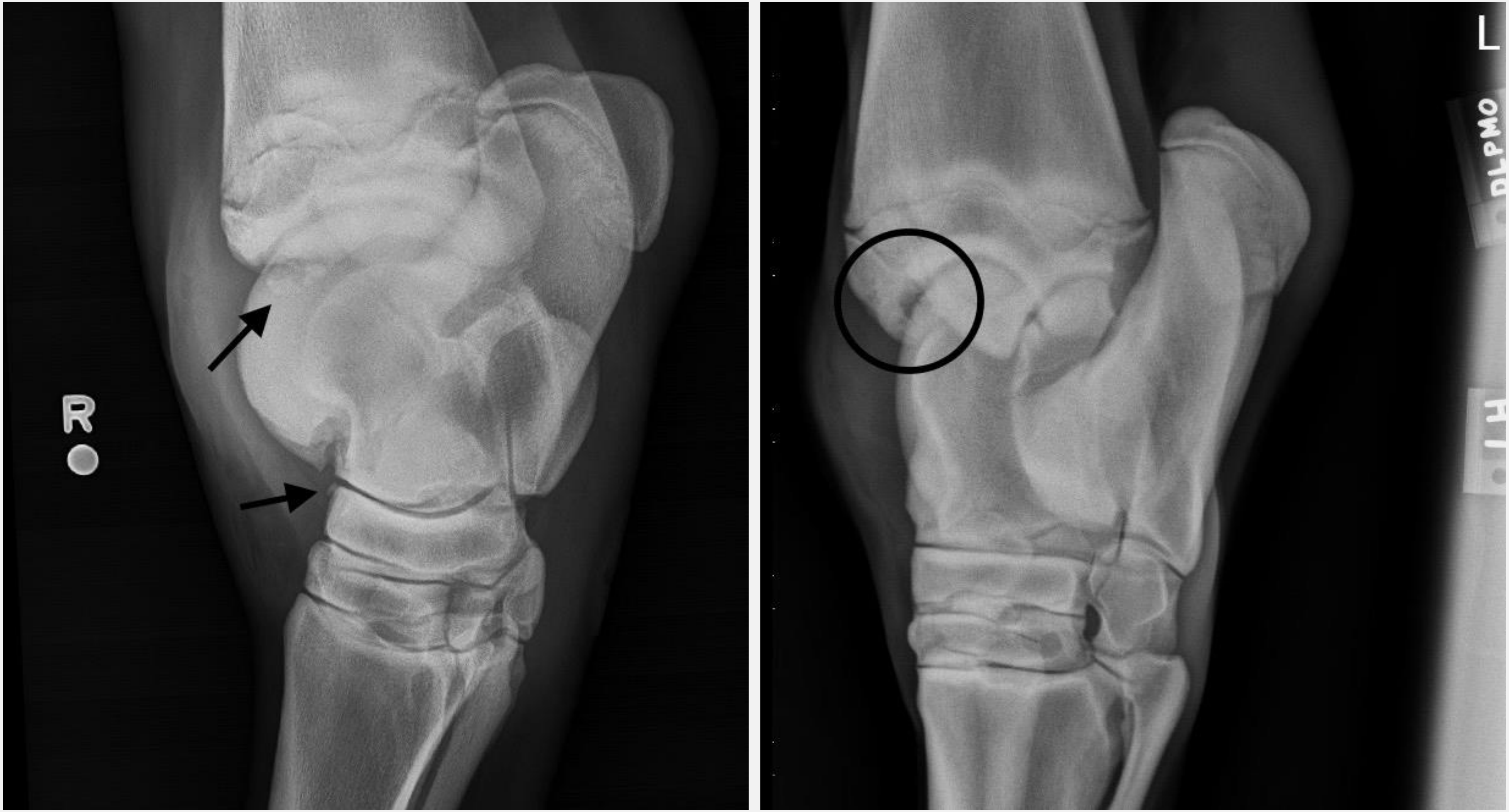
- OCD stands for osteochondritis dessicans
- Its is the failure of normal bone growth at the joint surface leading to poorly stabilized cartilage
- This unstable bone/cartilage interface leads to fragmentation at the joint surface

WHAT ARE THE SIGNS THAT YOUR YEARLING MIGHT HAVE IT?

- There may be no signs
- Lameness is not usually detected in young animals
- ‘Boggy’ hocks, or stifles – inflammatory process has begun
- Screening radiographs become important for early detection/treatment

RADIOGRAPHS

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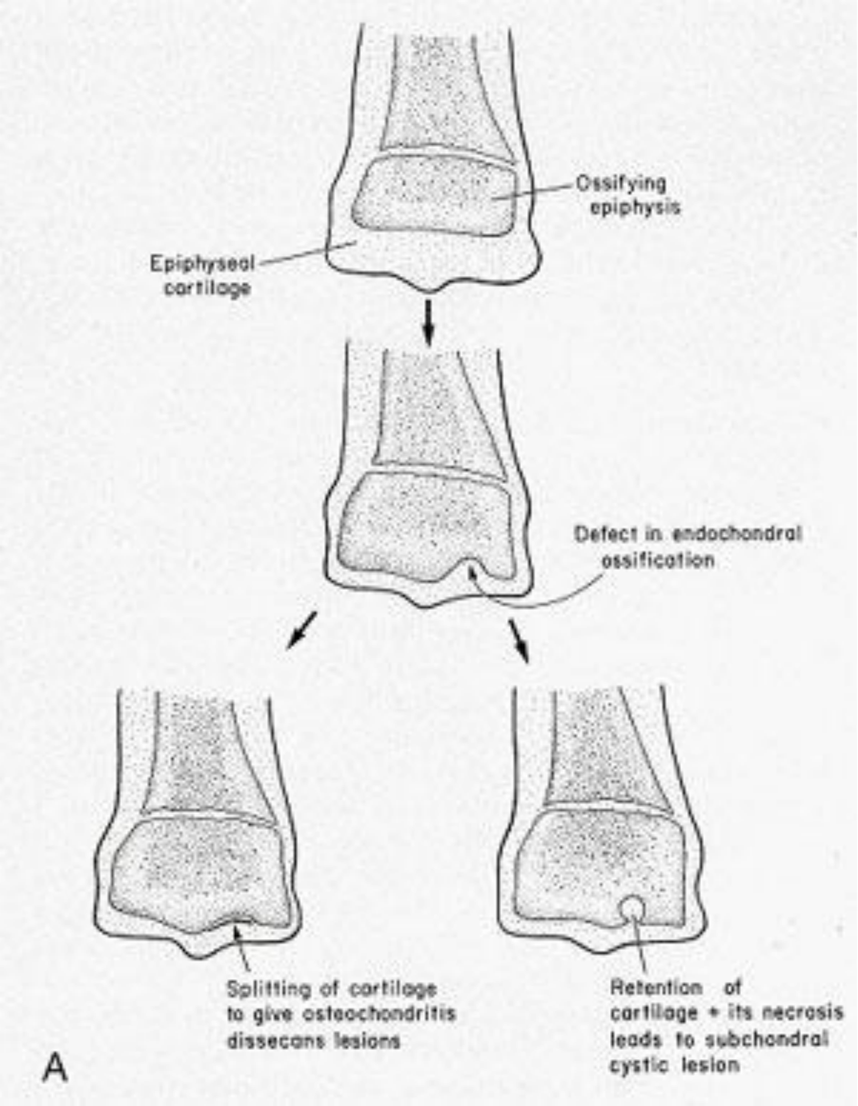
HOW DOES IT HAPPEN?

- During early growth phases, disruption of the fragile blood supply required for bone development
  - Trauma? Sepsis? Fast growth?

- Shearing or impact forces of movement/exercise at these areas of micronecrosis causes fragmentation

ABNORMAL BONE GROWTH



WHAT CONTRIBUTES TO ITS DEVELOPMENT?

- Multifactorial
  - Hereditary
  - Growth rate
  - Nutrition
  - Endocrine factors
  - Biomechanical stress & trauma

WHAT IS THE INFLUENCE OF GENETICS?

- Many studies have indicated genetic link to OCD
- Heritability estimates vary depending on breed and joint involved
- Numerous regions of the genome have genes contributing to the trait and they are not consistent

HOW COMMON IS IT IN THE STANDARDBRED?

- Hocks
  - Several Scandinavian prevalence studies report between 10.5%-19.3% of Standardbreds have hock OCD
  - Trotters more likely than pacers to be affected (18% versus 13%) in a 2020 study

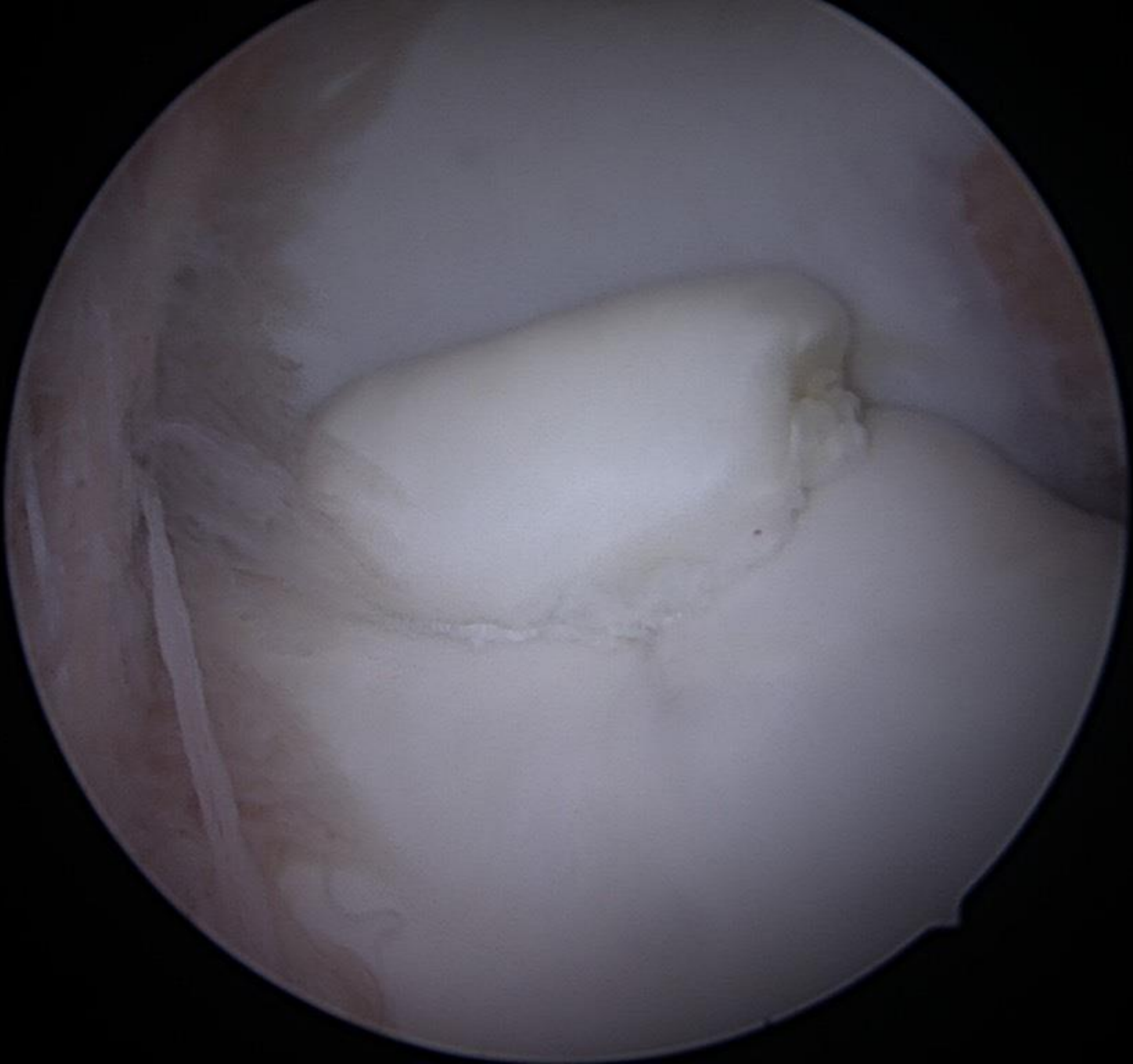
- Stifle & Fetlocks combined
  - Canadian study showed combined prevalence of 35% at a single breeding farm in Quebec

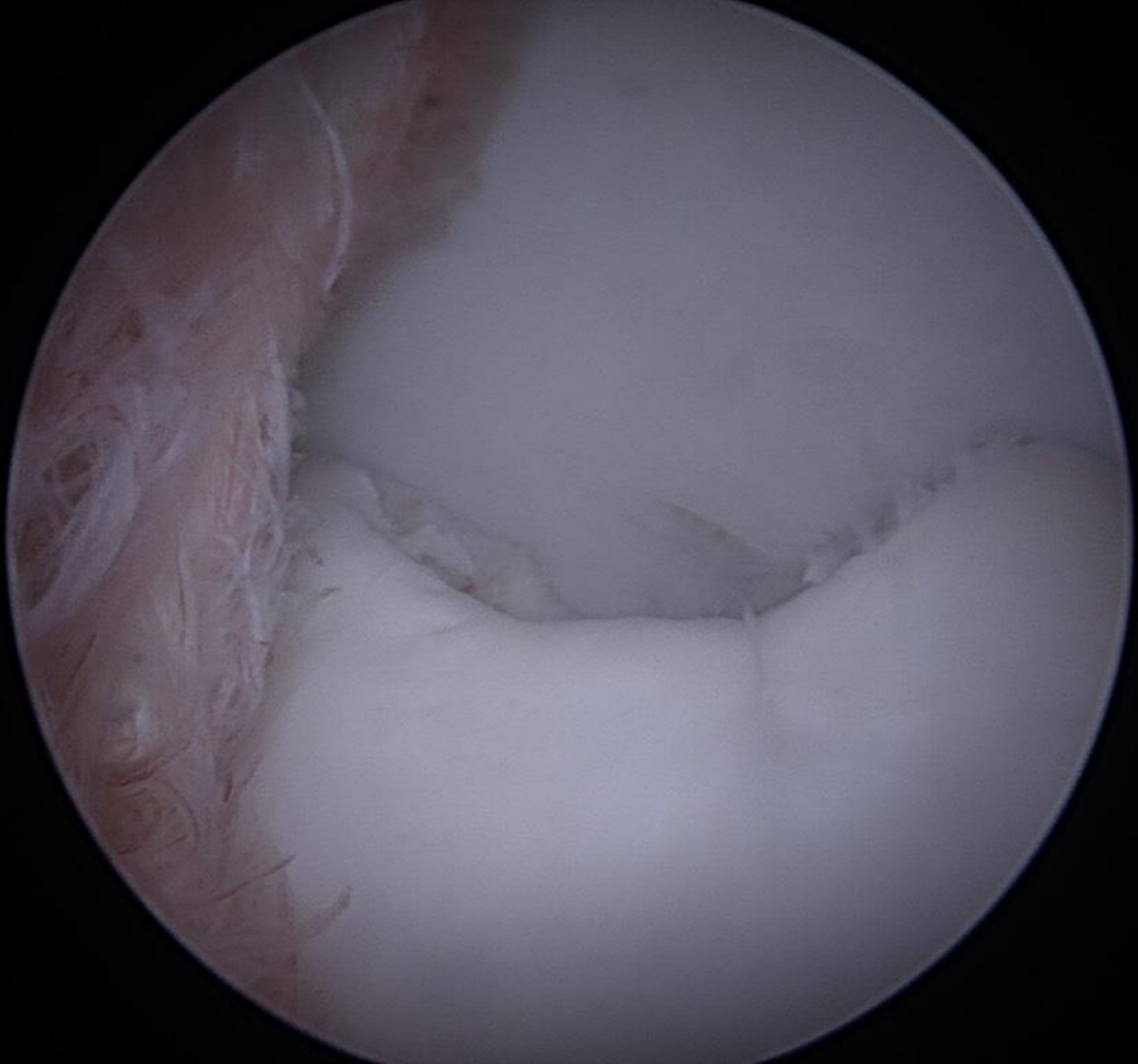
DOES IT GO AWAY ON ITS OWN?

- OCD lesions can improve up to 5 months of age in the hock and 8 months of age in the stifle
- ‘The Age Of No Return’ is considered to be 12 months
- If its still present at 12 months of age, it is very unlikely to resolve on its own

HOW IS IT TREATED?

- Minimally invasive (arthroscopic) removal of the fragment
- Debridement at the site of origin to encourage cartilage healing
- 3-6 weeks of rest post-operatively
- If joint has excessive effusion prior to surgery (bog) 20% of horses will continue to have effusion after surgery



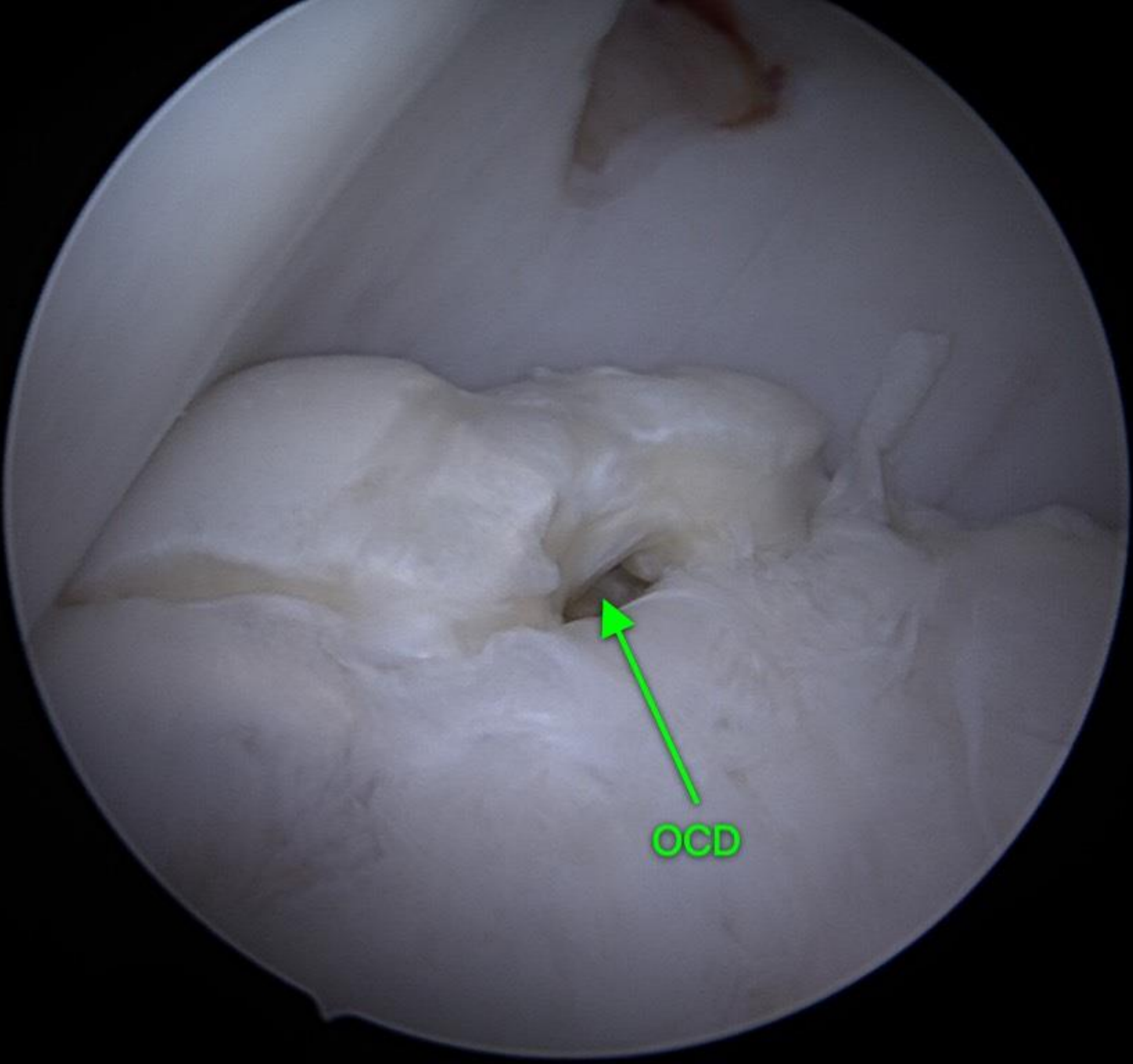


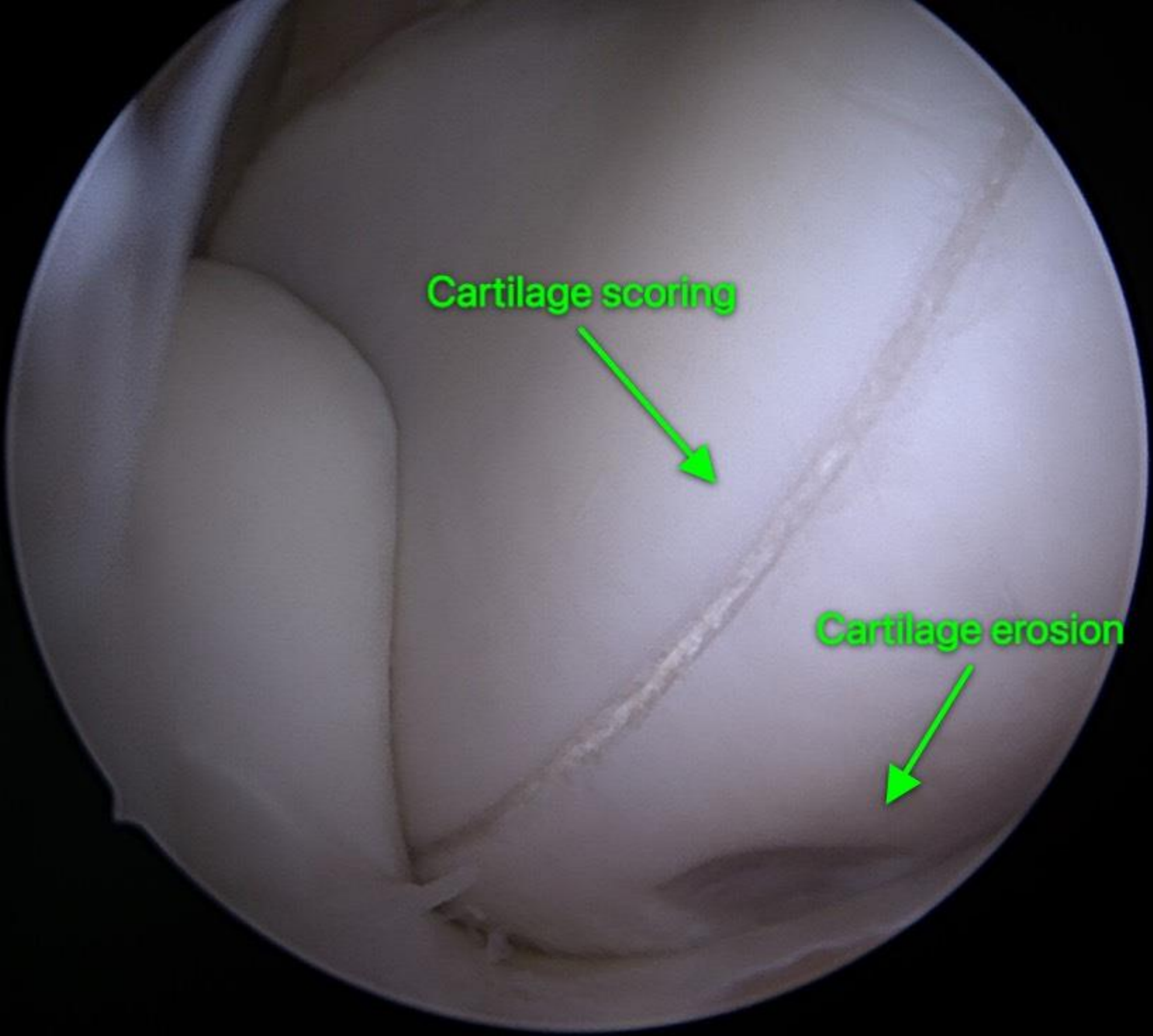
WHAT IF I DON'T TREAT IT?

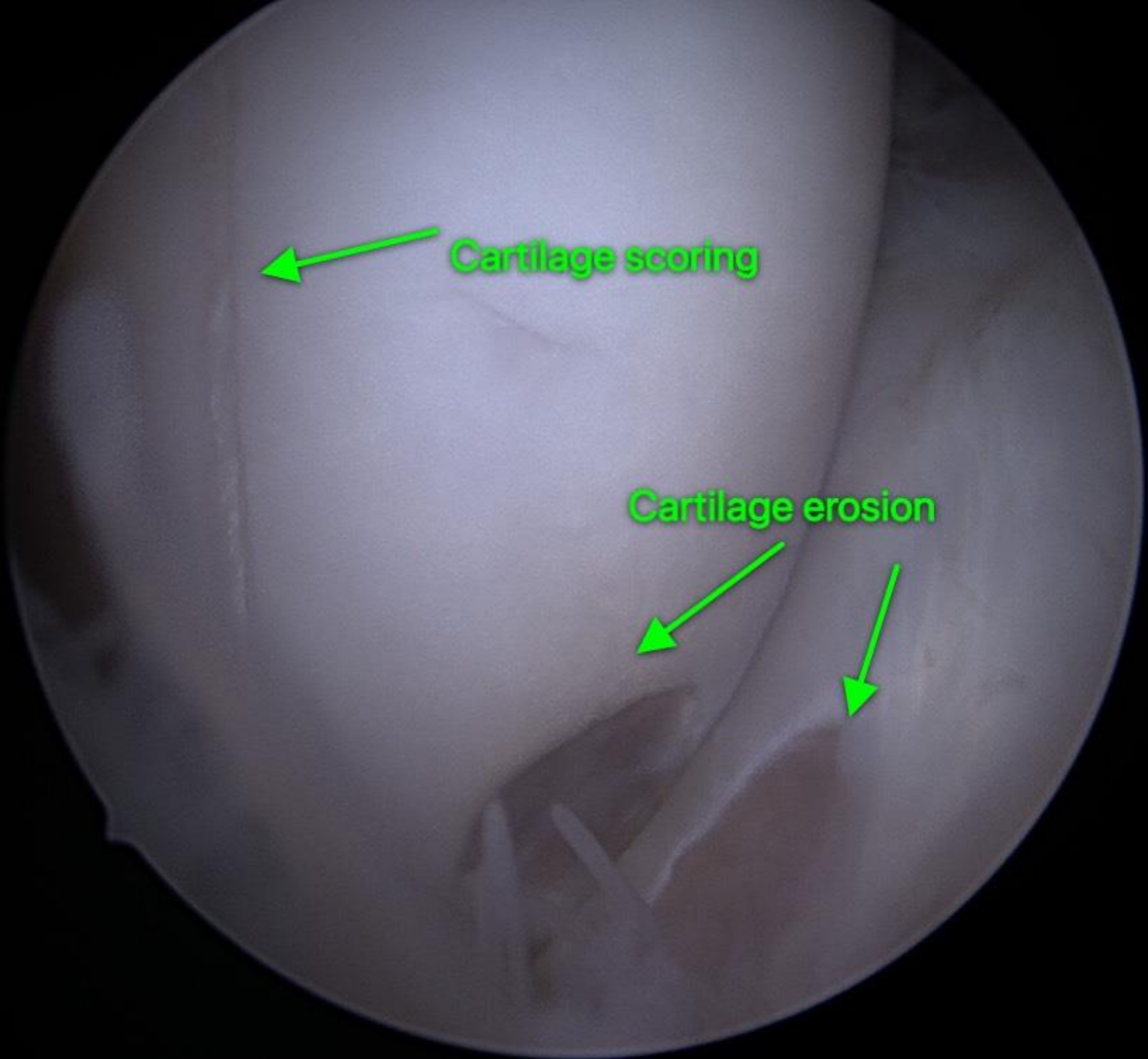
Once exercise begins, OCD lesions will lead to biomechanical stain on corresponding cartilage

This leads to the induction of osteoarthritis in the joint

Horses will have shortened careers due to joint pain and dysfunction


OCD


Cartilage scoring
Cartilage erosion

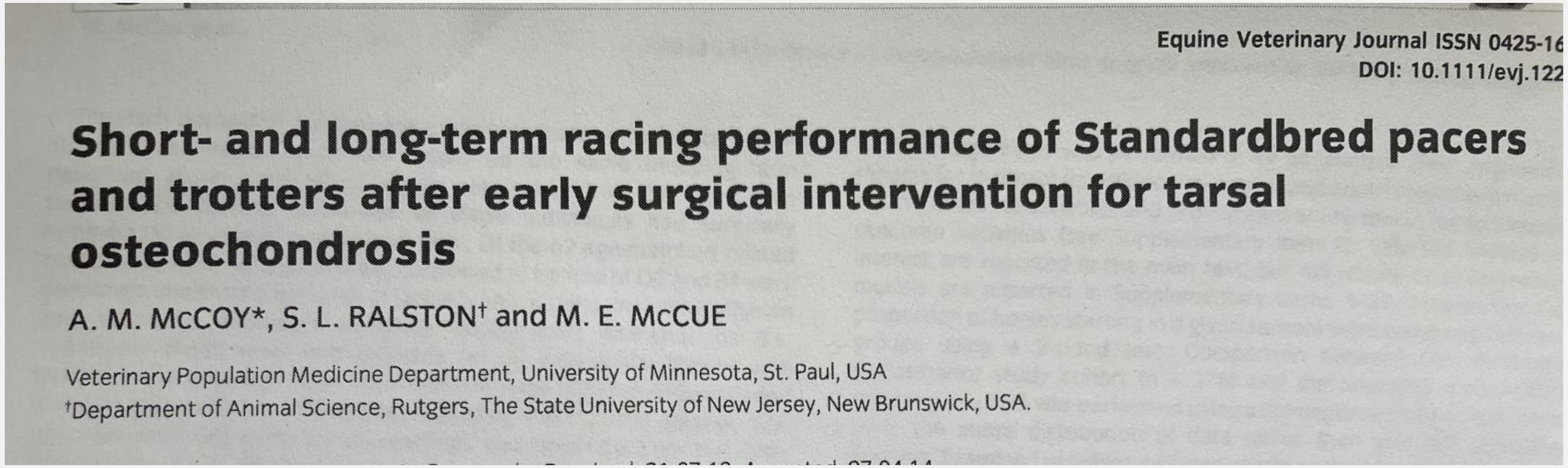

Cartilage scoring
Cartilage erosion

WHY SHOULD YOU CARE ABOUT OCD AS A BREEDER?

- Quality of your product at sale
  - Cost associated with treatment
  - Effect on sale price
  - Reputation for future sales

- Quality of your product on the racetrack
  - Does OCD affect racing ability?
  - Does OCD affect racing longevity?

HOW DOES IT AFFECT PERFORMANCE OF THE STANDARDBRED RACEHORSE?



Equine Veterinary Journal ISSN 0425-16
DOI: 10.1111/evj.122

Short- and long-term racing performance of Standardbred pacers and trotters after early surgical intervention for tarsal osteochondrosis

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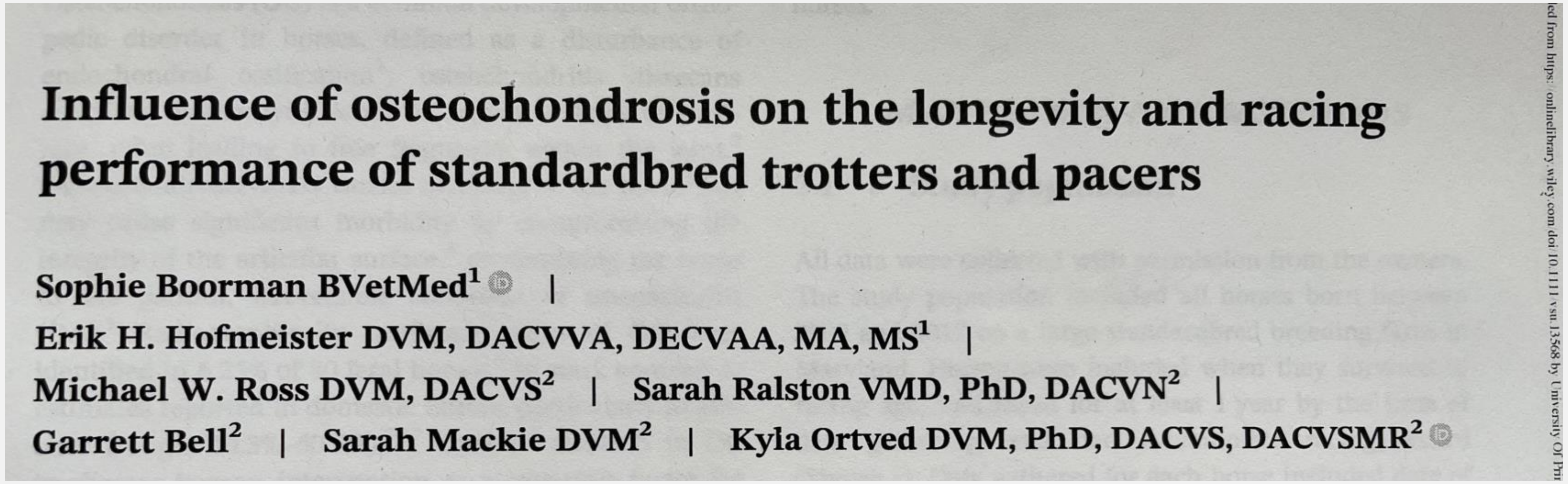

Influence of osteochondrosis on the longevity and racing performance of standardbred trotters and pacers

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1ST STUDY - 2015

- Study population 278 horses. 133 affected, 145 age matched unaffected controls.

- Sale price as yearling was not significantly affected by OCD status
  - Sire, gender and sale were significantly associated with sale price

1^{ST} STUDY – SHORT-TERM PERFORMANCE

- Short term performance defined at the 2-year old season
- No significant differences in study population between affected/unaffected
  - Starting at least one race, number of starts, wins or top 3 finishes, fastest time, earnings or earnings per start
- No significant difference between study cohort and 288 randomly selected contemporaries

1ST STUDY – LONG TERM PERFORMANCE

- Long term performance defined as 2- through 5-year old seasons (94 horses)
- Similarly – OCD status did not affect sale price
- No significant difference in any performance parameters with following exceptions:
  - In 3-year old year OCD affected horses 33% MORE top 3 finishes
  - However, over 4 cumulative years period OCD affected horses had 24% as many wins

2ND STUDY - 2020

- Large study population of 2711 horses. 382 affected. 2329 healthy controls
- No difference in likelihood to race. Odds ratio = 1
- No impact on any parameters of short-term racing performance (2,3,4 y/o seasons)
  - Starts, earnings, & earning per start not different between affected & unaffected horses

2ND STUDY

- Long term racing performance (Life-time)
  - No difference in lifetime earnings, earning per start, or fastest time achieved

  - Affected horses had 8.8 fewer starts over their careers
  - Affected horses had 1 fewer wins over their careers
  - Affected horse had 3.8 fewer 1st through 3rd placements over their careers
  - Unaffected horses raced 4 months longer than affected horses

WHAT DO I RECOMMEND TO BREEDERS?

- Screening radiographs of all yearlings at 12-14 months of age
- Identified lesions removed prior to development of effusion (bog), prior to sale, and prior to beginning training
- Be ’ok’ with smaller yearlings
- Broodstock selection?

CAN I ANSWER MORE QUESTIONS?