Affections of equine hoof

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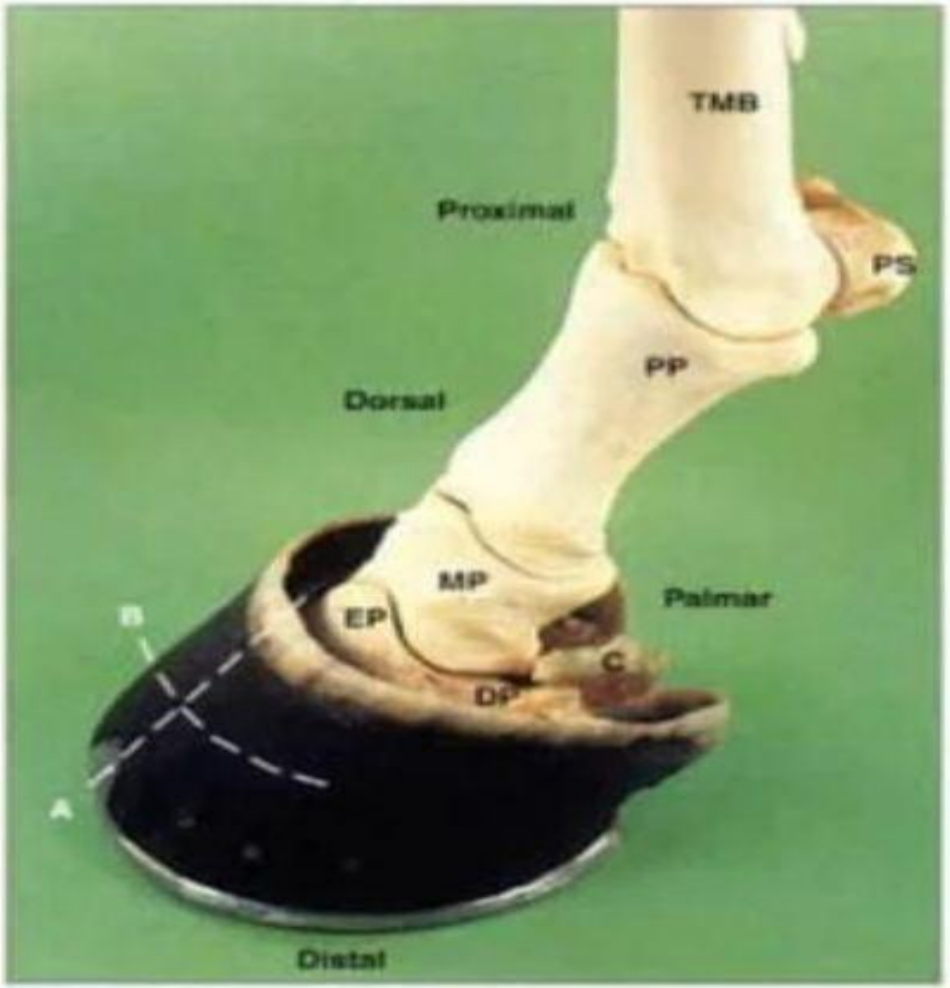
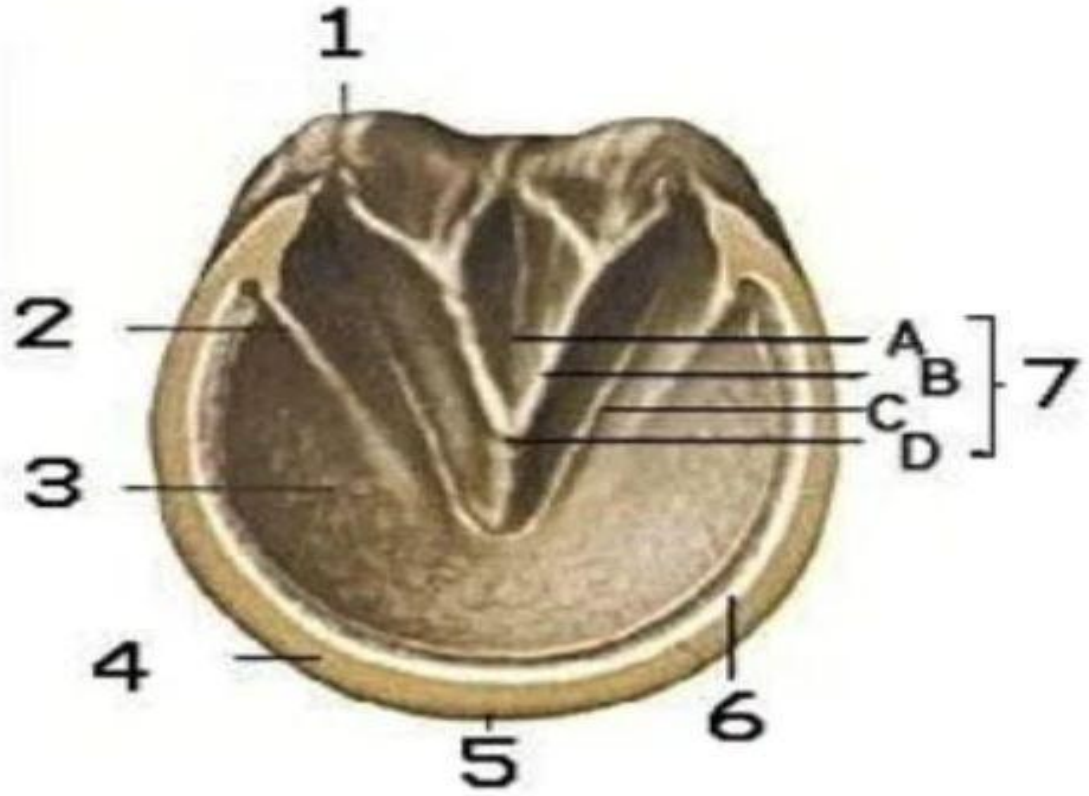
OSTEOLOGY OF HORSE FEET



- TMB - third metacarpal bone,
- PS - proximal sesamoid bones,
- PP - proximal phalanx,
- MP - middle phalanx.
- DP - distal phalanx,
- EP - extensor process,
- C - cartilage of distal phalanx.

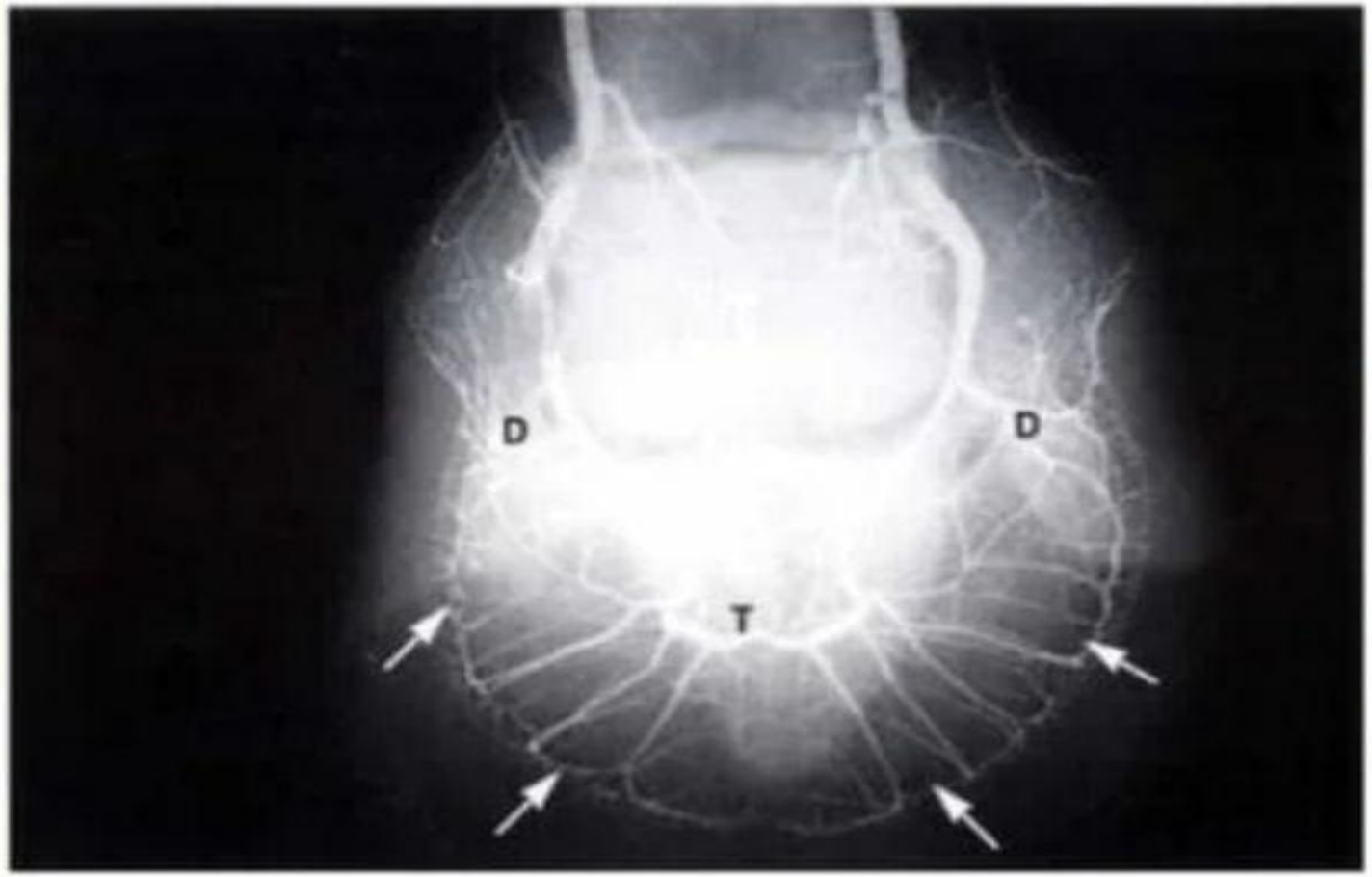
THE HOOF FROM THE BOTTOM

1. Bulb of Heel
2. Bar(s)
3. Sole
4. Wall
5. Toe
6. White Line



7. Frog
   A. Central groove
   B. Ridge
   C. Lateral groove
   D. Apex

ARTERIOGRAM OF HOOF



DORSO - PALMAR VIEW

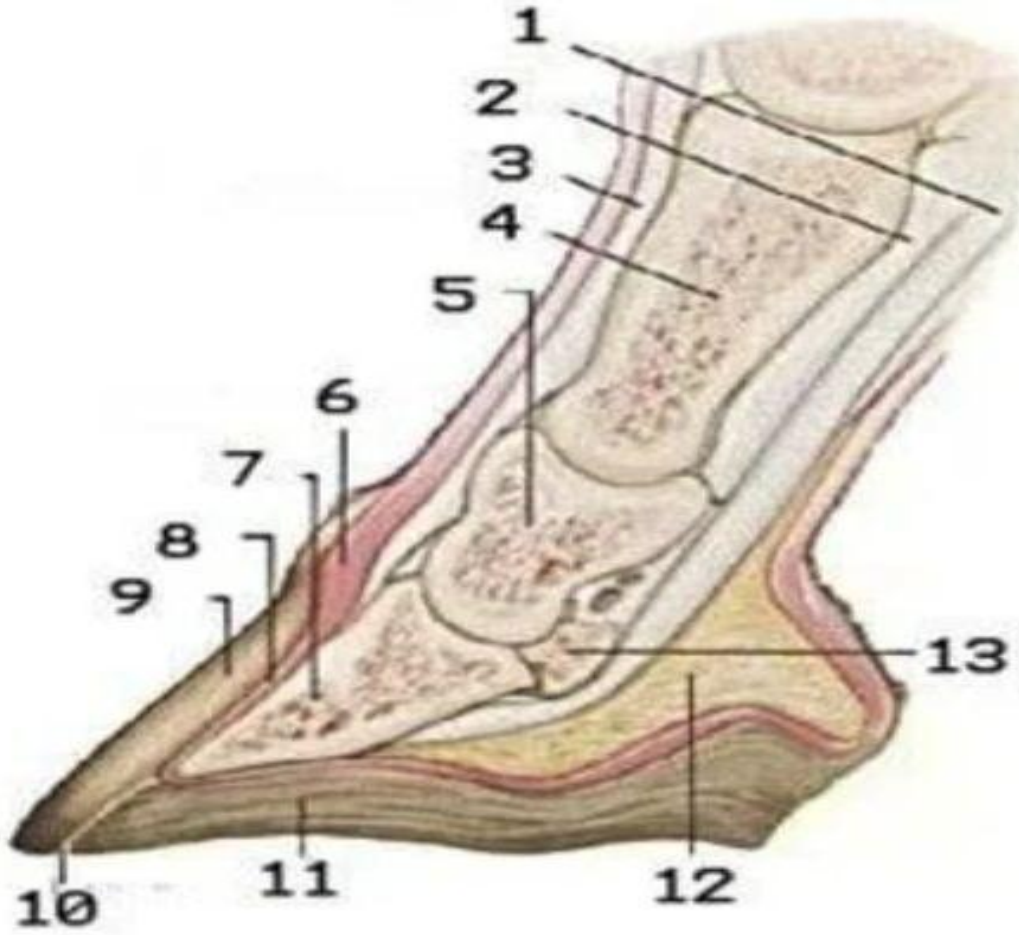
T -THE TERMINAL ARCH

ARROWS- THE CIRCUMFLEX ARTERY) OF SOLE.

D-PAIRED DORSAL ARTERY

The Hoof

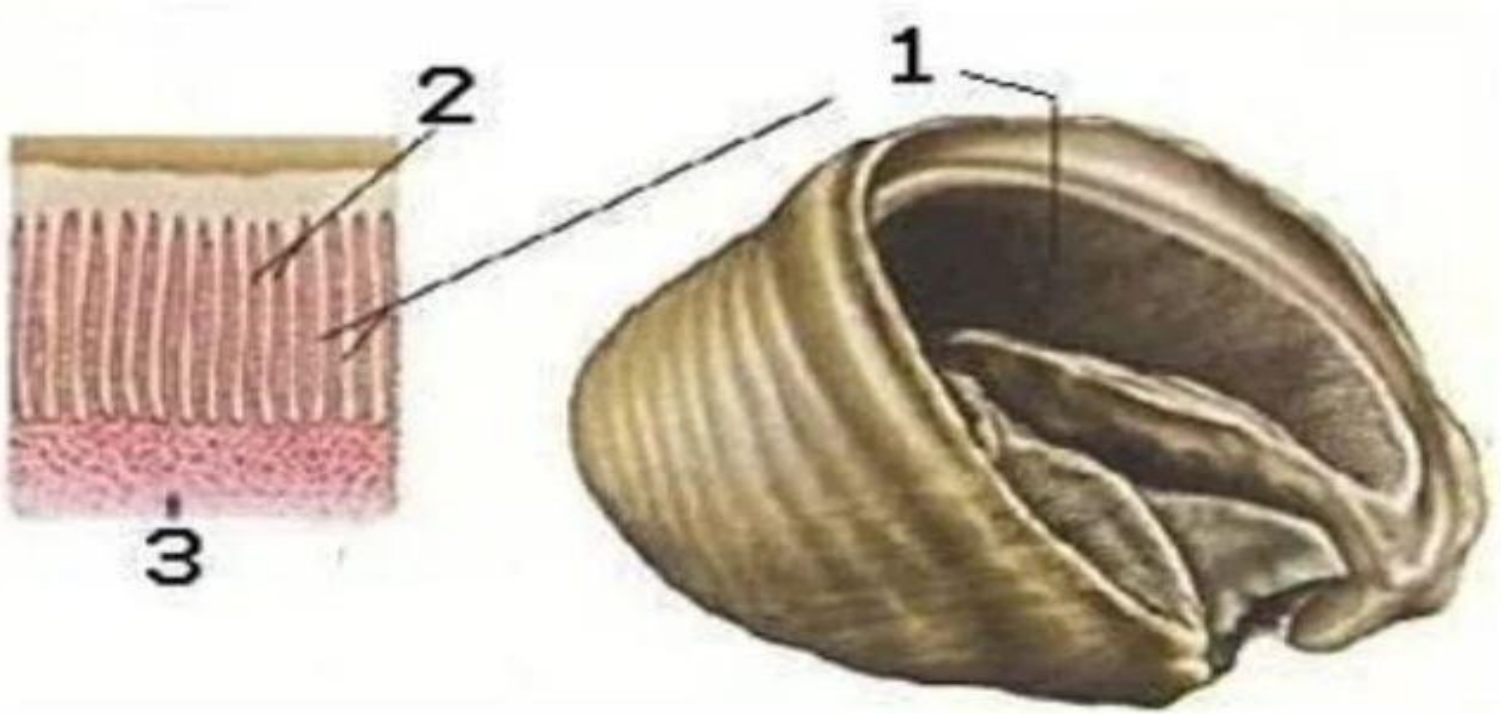
1. Digital Flexor Tendon
2. Sesamoidean ligament
3. Digital extensor tendon
4. Long pastern bone
5. Short pastern bone
6. Coronary corium
7. Pedal bone
8. Laminar corium
9. Wall
10. White Line
11. Sole



12. Plantar cushion
13. Navicular bone

INSENSITIVE/ SENSITIVE LAMINAE

1. Insensitive laminae
2. Sensitive laminae
3. Laminar corium

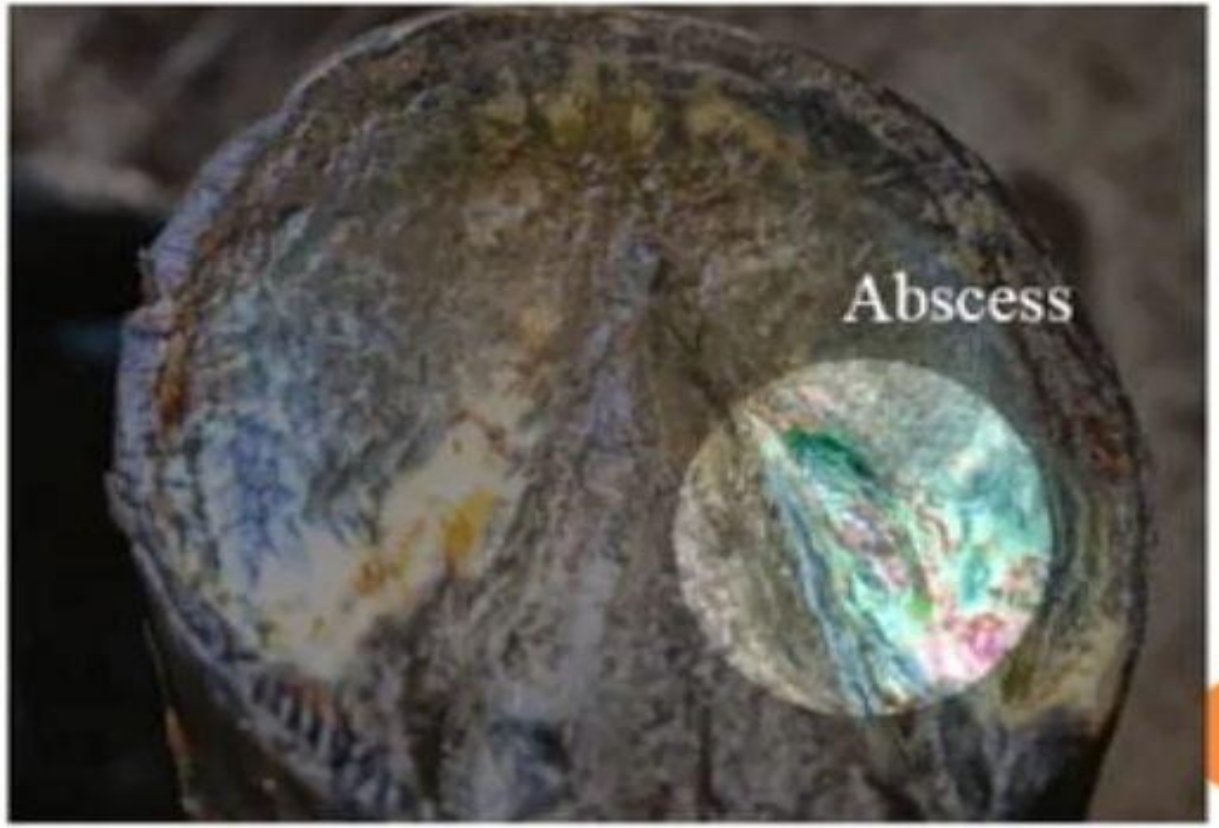


VARIOUS AFFECTION OF HOOF

- **Abscesses**
- **Contracted Heels**
- **Corns**
- **Laminitis (Founder)**
- **Navicular Syndrome**
- **Sand Cracks**
- **Seedy Toe**
- **Thrush**
- **White Line Disease**

ABSCESSES

- Infections of the soft portion of the hoof
- Usually start as a result of a puncture wound or injury




Abscess exit hole
growing out
Old abscess in white line

CLINICAL SIGNS

- - Lameness with severe pain

  - May see dark spot on hoof

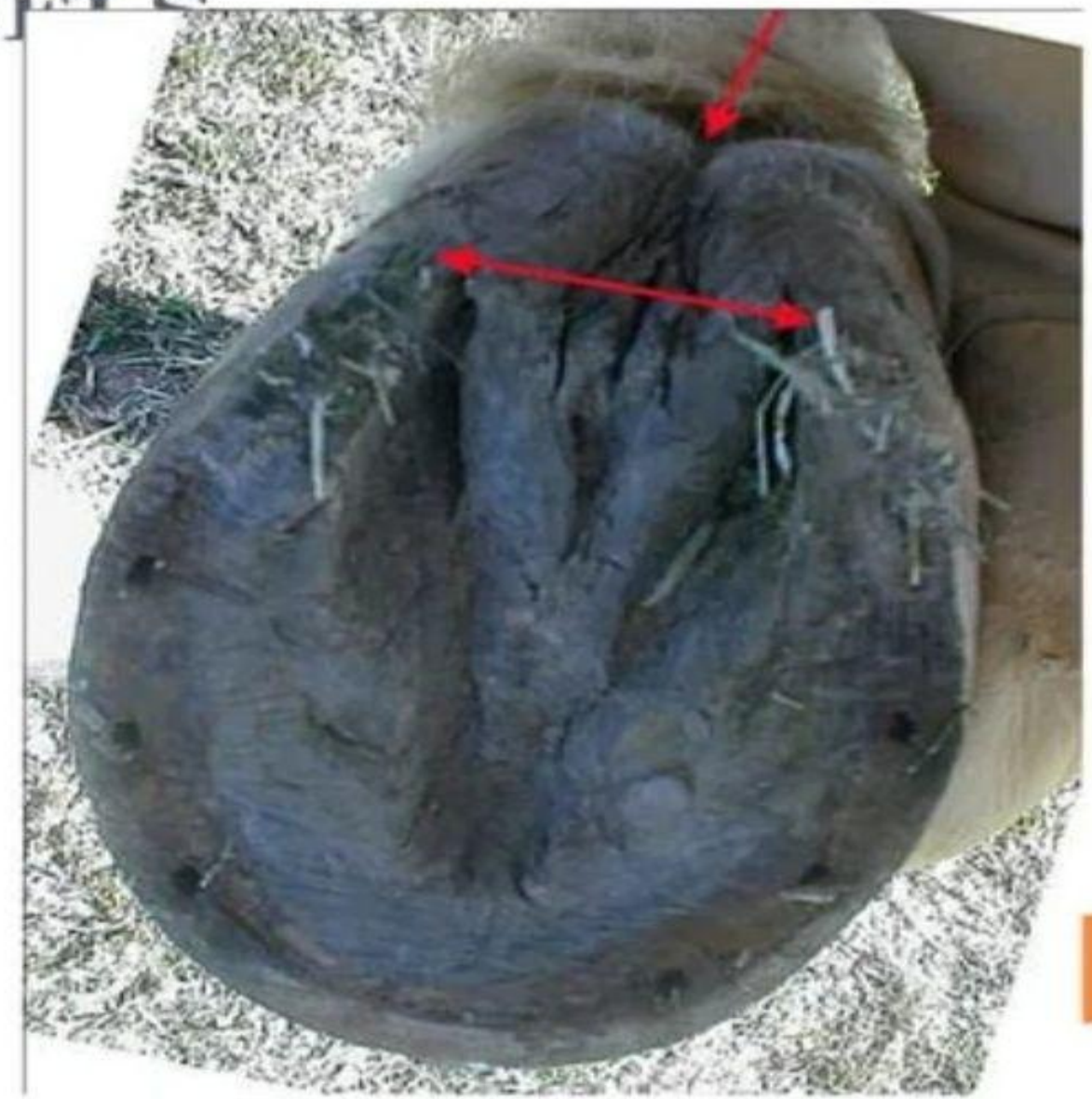
  - Some abscesses may open and drain

TREATMENT AND PREVENTION

- Abscess will need to be opened to allow drainage
- Antibiotics for deeper abscesses
- Severe abscesses may require long-term treatment with regular dressing changes
- Good hoof care to prevent cracks and injuries, including topical protection

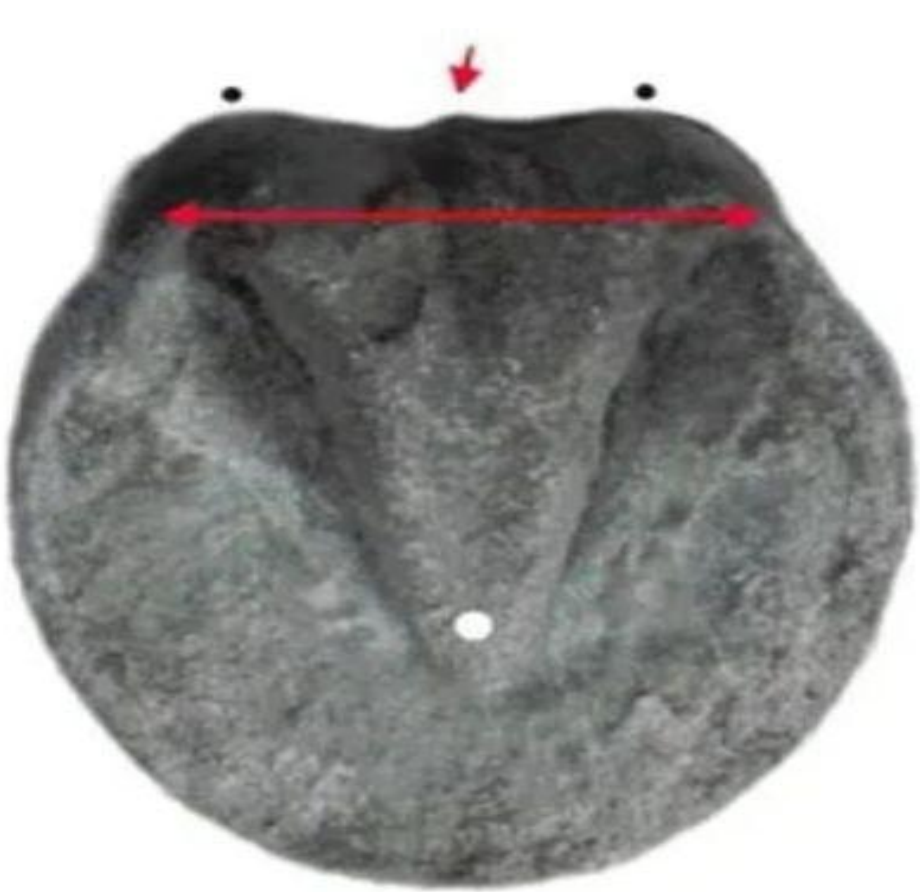
CONTRACTED HEELS

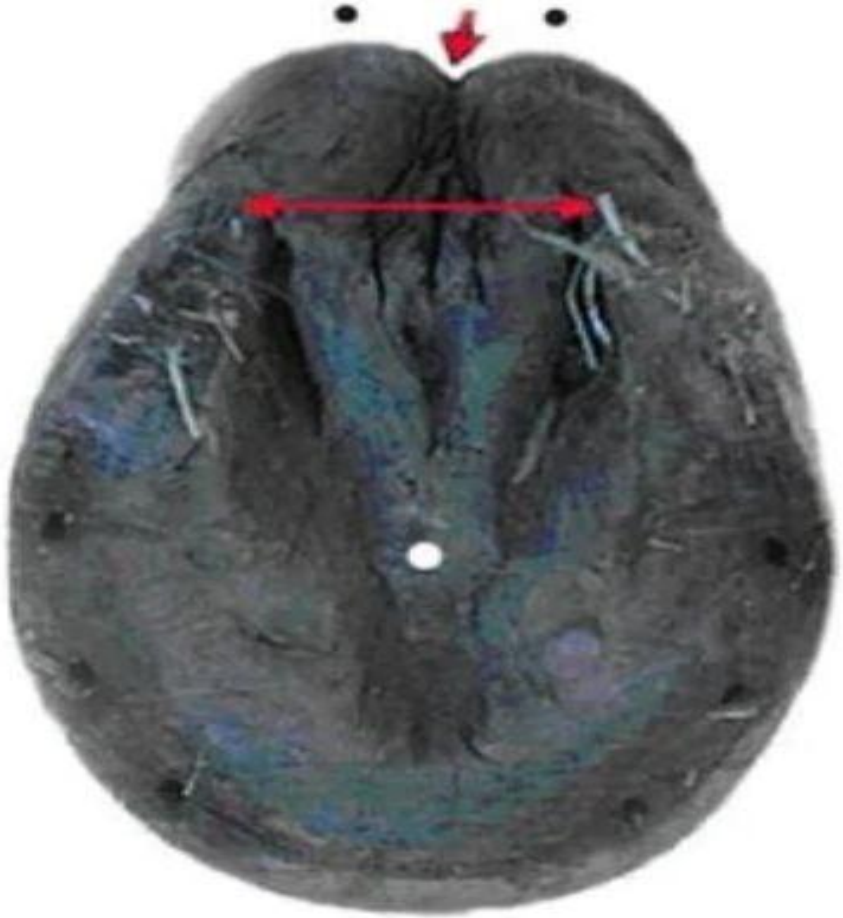
- The heel area narrows such that the width at the base of the frog is less than 2/3 the width of the widest part of the hoof



CAUSES

- - Poor conformation - genetics
- Dry environment leading to loss of moisture in hoof
- Improper shoeing or poor hoof trimming
- Lack of exercise





CLINICAL SIGNS

- - The width at the base of the frog is less than 2/3 the width of the widest part of the hoof

  - Can often lead to other hoof problems

TREATMENT AND PREVENTION

- Proper hoof trimming (may take months of regular trimming to resolve) and, if necessary, corrective shoeing

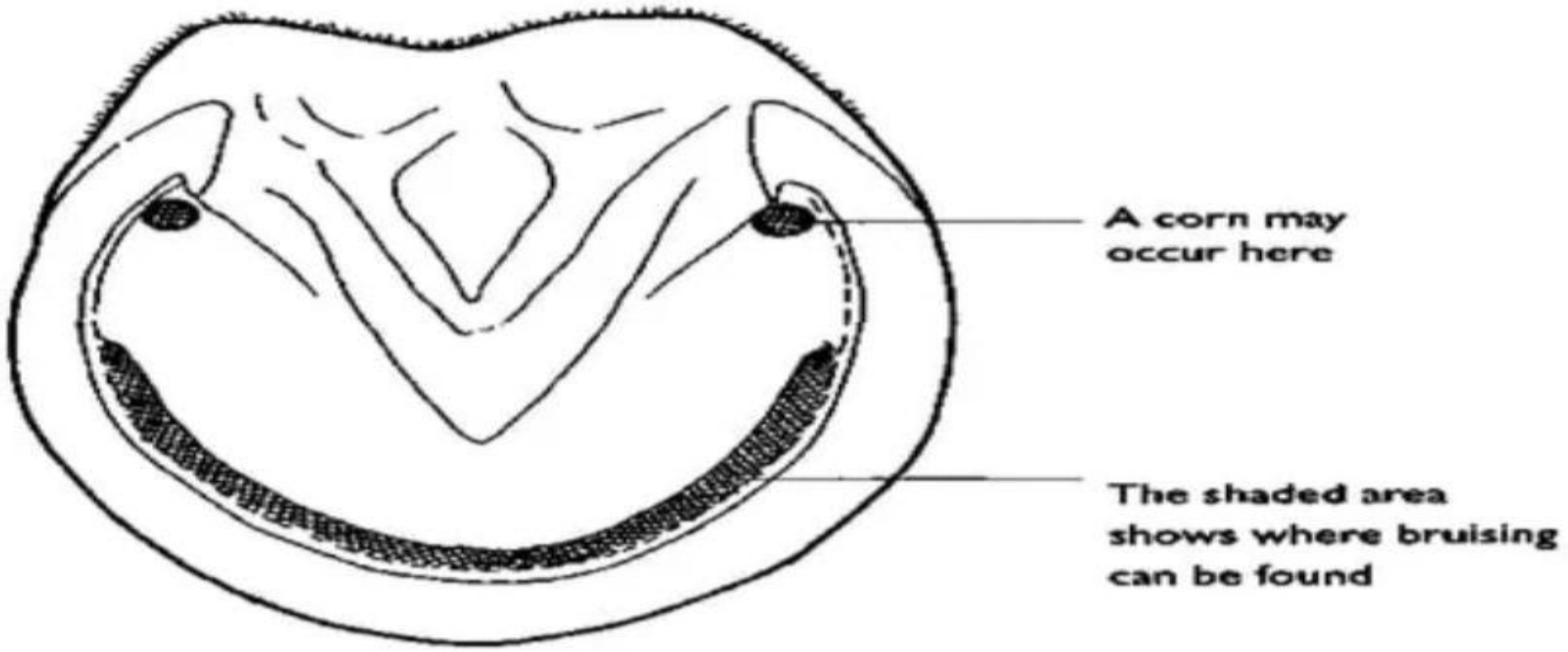
- Restore hoof moisture

- Proper hoof trimming and shoeing

- Providing adequate exercise

CORNS

- Bruise of the sole at the back of the hoof at the angle between the wall and the bars
- Improper shoeing or poor hoof trimming



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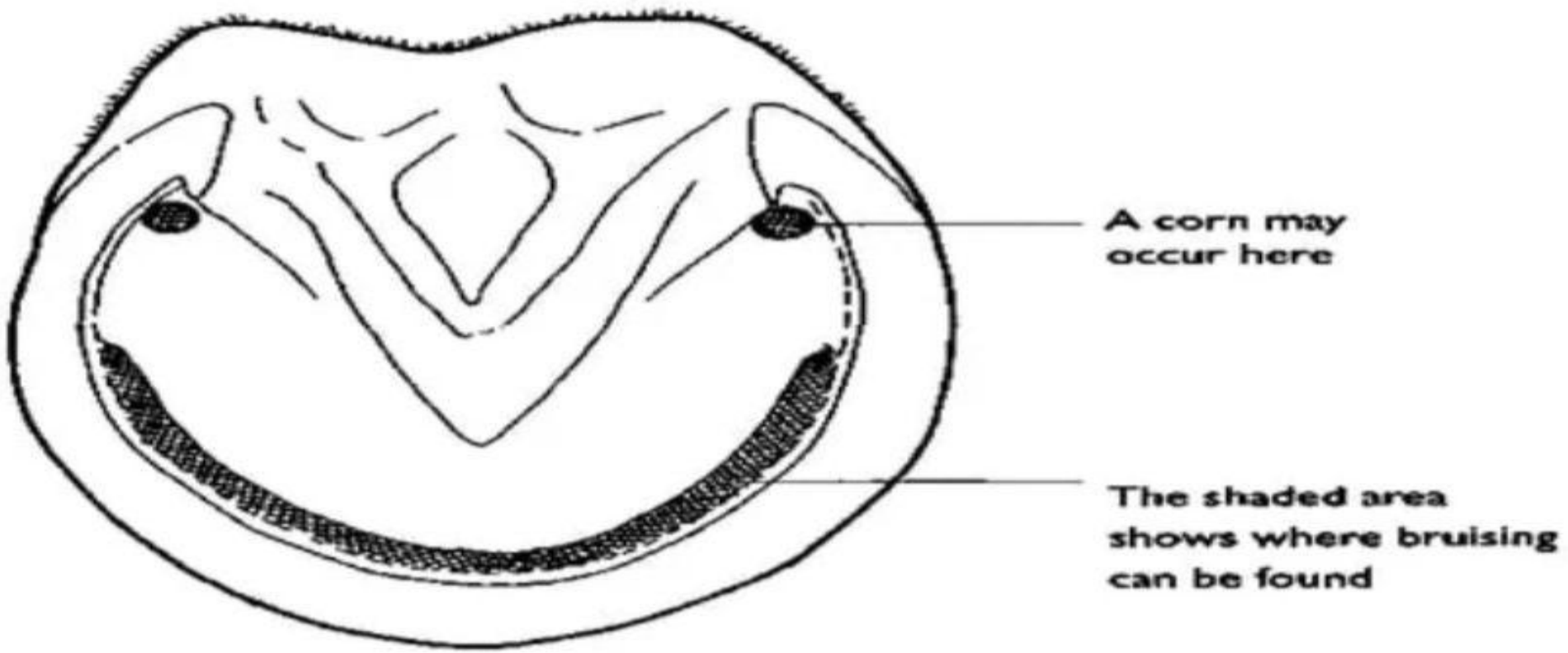


CLINICAL SIGNS

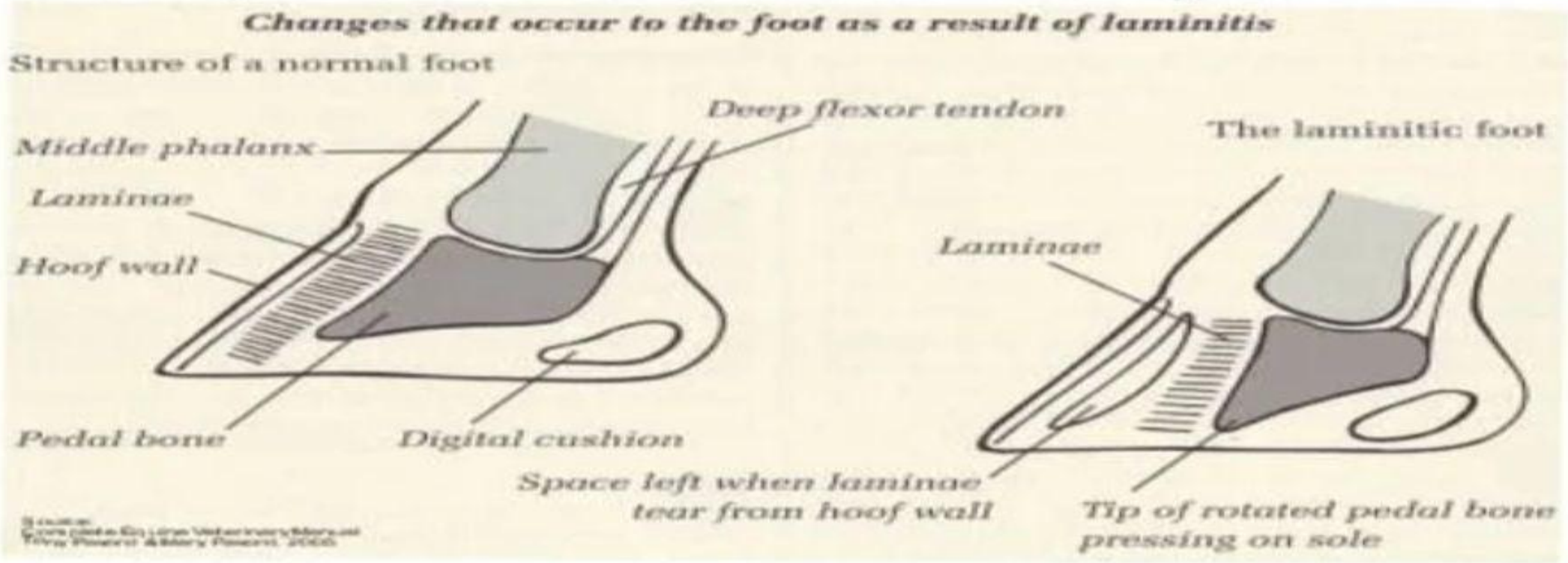
- Yellow or red discoloration of the sole, usually on the front feet
- Possible lameness
- Soreness of the area when using a hoof tester
- Area of corn may become abscessed

TREATMENT AND PREVENTION

- Corrective trimming
- Shoeing to protect and transfer weight from the bruised area
- Draining of the area if there is an abscess
- Proper hoof trimming and shoeing

LAMINITIS (FOUNDER)

- Inflammation of the sensitive lamina (the connective tissue between the hoof and the coffin bone). The circulation becomes disrupted.

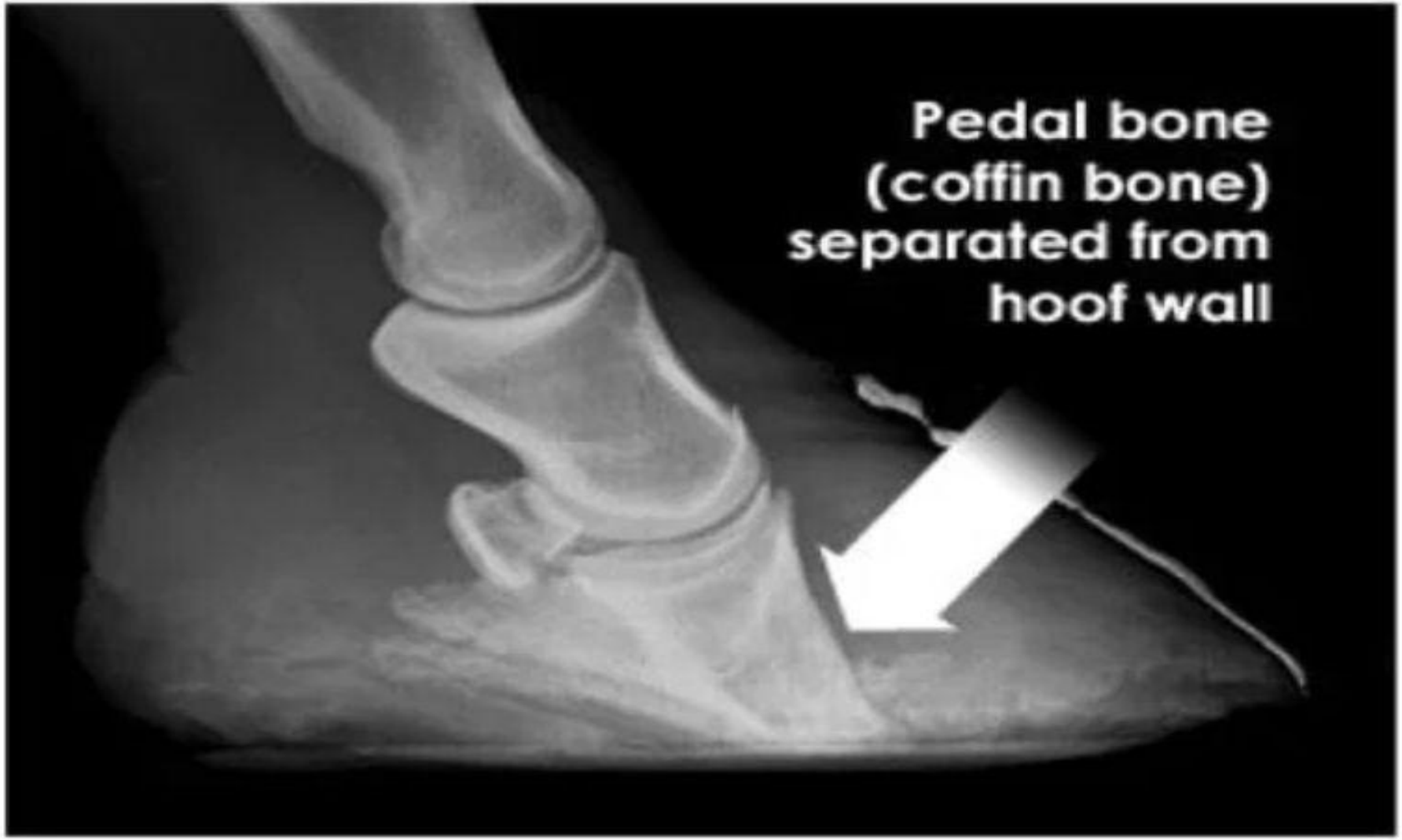


CAUSES

- Poor foot trimming
- Grain overload
- Toxicity from colic
- Certain steroid medications
- Foot injury

CLINICAL SIGNS

- The signs are progressive. At first, walks as though on eggshells. Then weight shifted to rear feet. Then resists walking, and lies down much of the time. Can result in severe, permanent, life-threatening lameness.
- Cat on hot bricks (very peculiar gait)

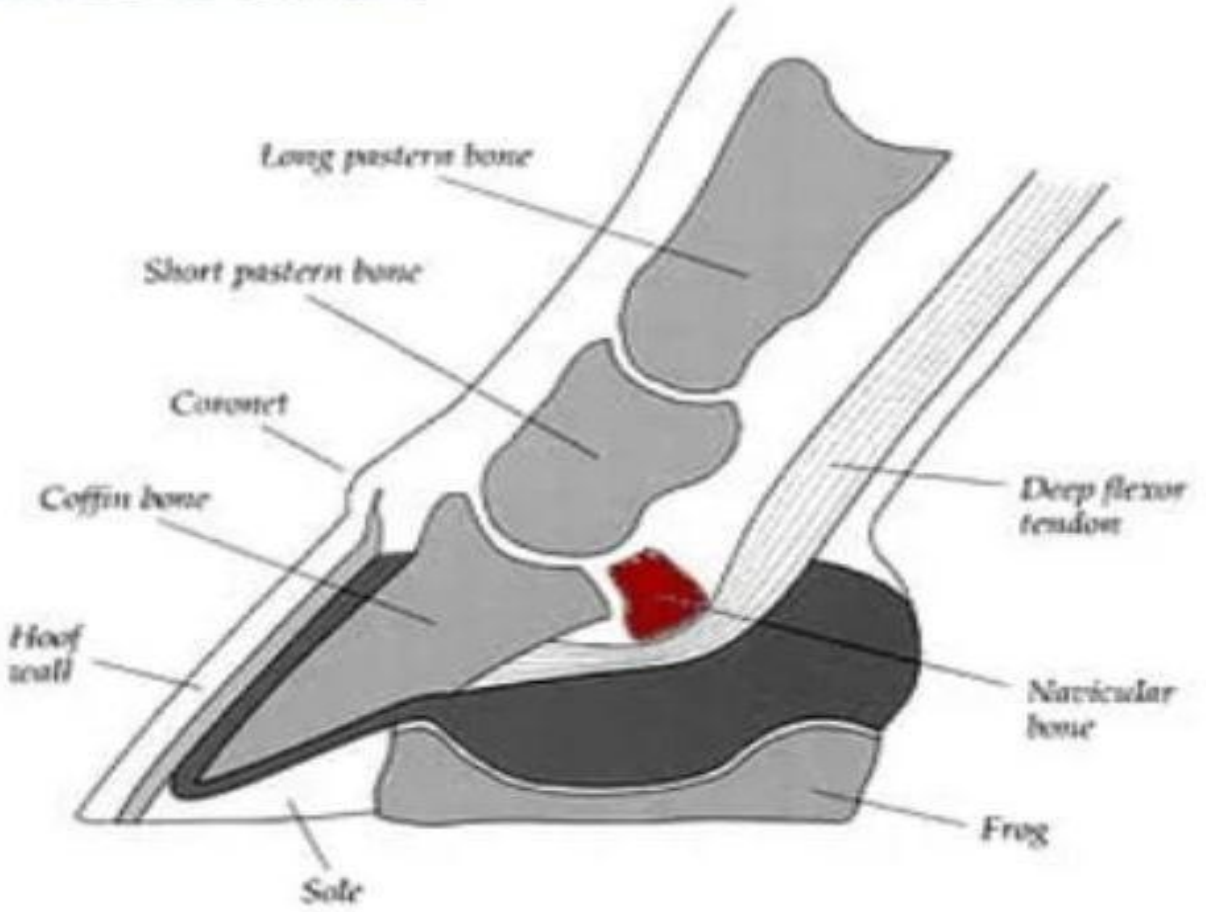

Pedal bone
(coffin bone)
separated from
hoof wall

TREATMENT AND PREVENTION

- Radiographs (x-rays) often necessary
- Provide soft footing
- Give anti-inflammatory medications and medications that improve circulation to the foot
- Corrective shoeing
- Good nutrition - avoid too much grain or concentrated carbohydrate
- Provide good footing

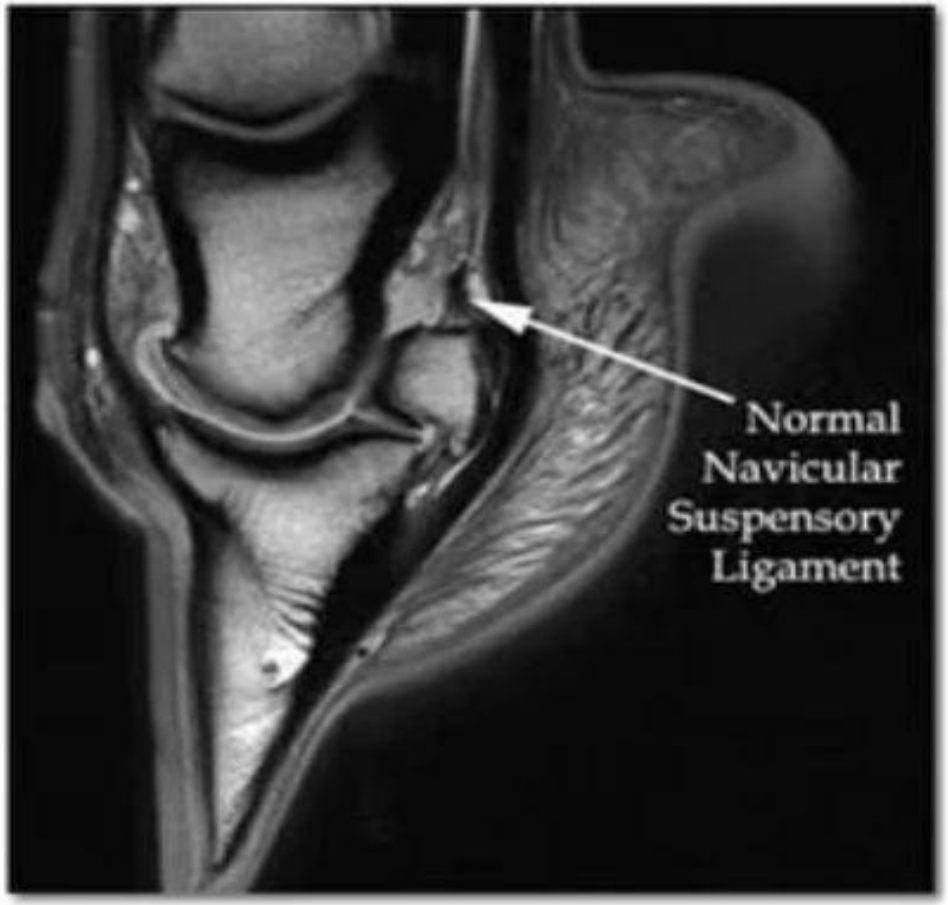
NAVICULAR SYNDROME

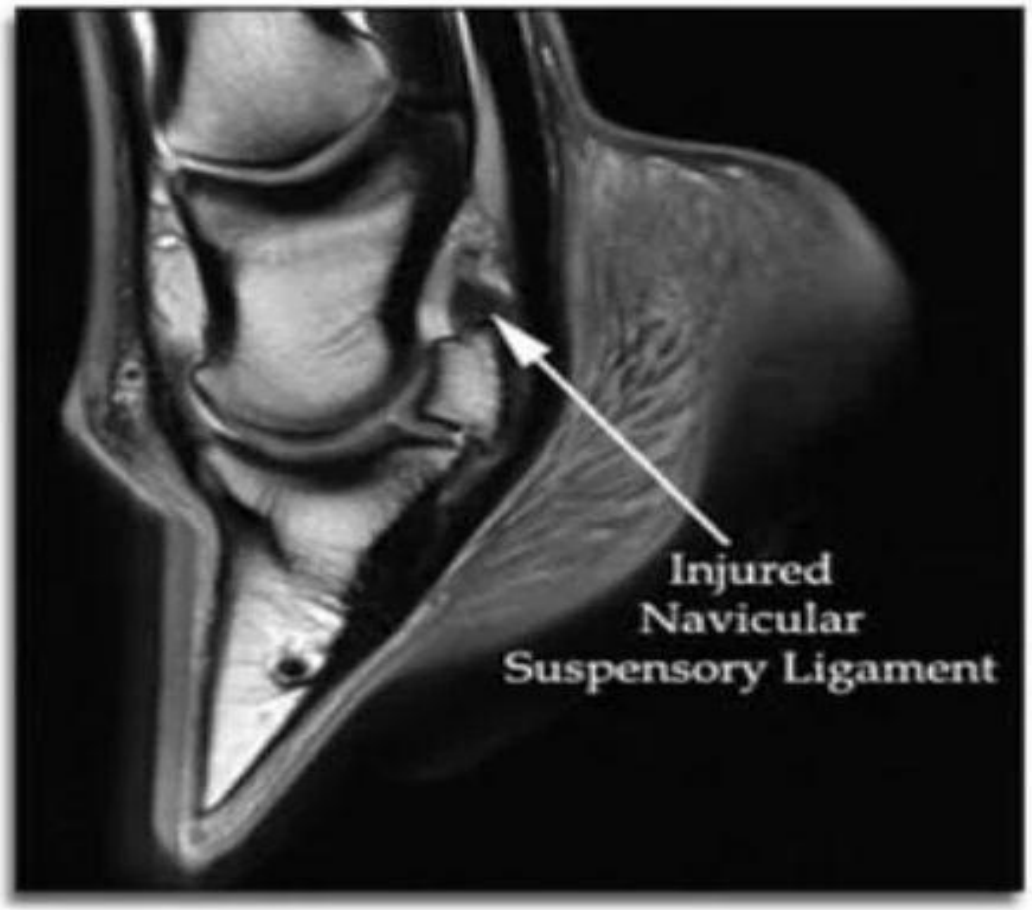
- Inflammation and degeneration of the navicular bone and surrounding tissues. This disease begins with inflammation and gradually results in deterioration of the bony tissue of the navicular bone.



CAUSES

- Genetics and poor conformation
- Improper nutrition
- Continual impact of the toe on hard surfaces


Normal
Navicular
Suspensory
Ligament


Injured
Navicular
Suspensory Ligament

CLINICAL SIGNS

- Intermittent lameness that tends to get worse over time
- Toe will become worn as it hits the ground before the heel
- Usually affects front feet

TREATMENT AND PREVENTION

- - Proper trimming and shoeing

  - Medications to increase circulation and decrease pain

  - Surgery may be necessary
- Proper breeding

  - Proper shoeing

  - Adequate exercise, avoiding athletic stress

SAND CRACKS

- Vertical cracks in the hoof wall that start at the ground surface
- Improper shoeing

  - Excessively dry environment

  - Poor nutrition

  - Training on hard surfaces

CAUSES

- Improper shoeing

  - Excessively dry environment

  - Poor nutrition

  - Training on hard surfaces

SIGNS

- - Crack usually visible. May not cause lameness if remains superficial

TREATMENT AND PREVENTION

- Corrective shoeing

  - Restrict activity

  - If deep, hoof repair and pain medication
- - Proper shoeing

  - Good nutrition

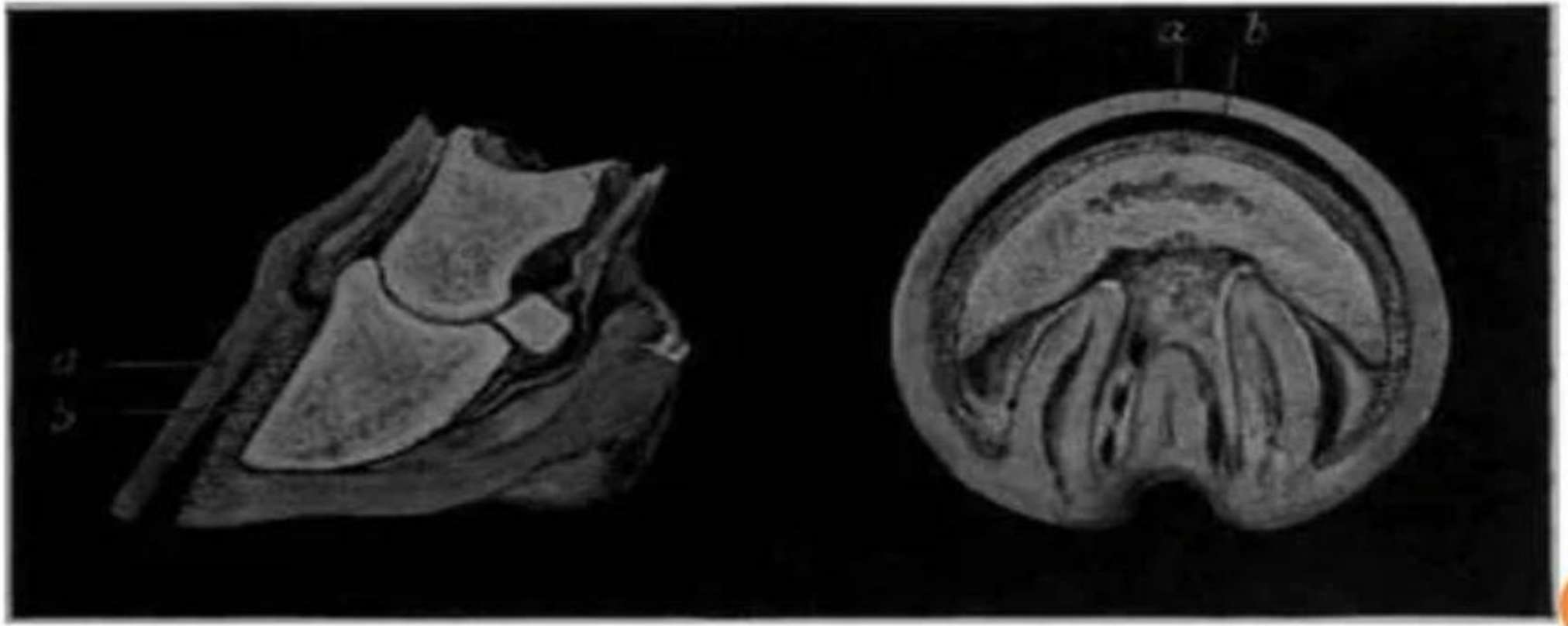
  - Hoof moisturizer and protectant

SEEDY TOE

- Separation of the hoof wall at the white line. Is sometimes used as a synonym for "white line disease"

CAUSES

- Often a consequence of laminitis



SIGNS

- Crumbly soft material at the junction of the hoof wall and sole (the white line)

TREATMENT AND PREVENTION

- - Hoof trimming and corrective shoeing

  - Ensure tetanus vaccination is up to date
- Prevent conditions that could lead to laminitis

Seedy toe cut out to remove abnormal hoof horn

THRUSH

- Bacterial infection of the frog

CAUSES

- Frog consistently packed with manure, mud, or moist bedding

SIGNS

- Foul-smelling, black, clay-like material in the area surrounding the frog

TREATMENT AND PEVENTION

- - Clean hooves

  - Improve sanitation and keep horse's feet dry

  - Use a drying agent if necessary

  - Ensure tetanus vaccination is up to date
- Clean hooves regularly

  - Provide dry environment

  - Use a thrush topical

WHITE LINE DISEASE

- A breakdown of the protein in the inner hoof wall by bacteria and fungi

CAUSES

- Bacterial or fungal infection often associated with hoof injuries that allow entrance of the microorganisms

  - More common in humid conditions

  - Improper trimming

SIGNS

- - Starts with powdery, chalky area located along the junction of the hoof wall and sole (the white line); then causes a separation of the wall and sole

  - Soreness

  - Abnormal growth of hoof wall

TREATMENT AND PREVENTION

- - Hoof trimming to remove affected wall

  - Corrective shoeing

  - Medications to kill fungus and bacteria

  - Keep hoof clean and dry
- - Prompt treatment of any other hoof condition

  - Proper nutrition

  - Good sanitation