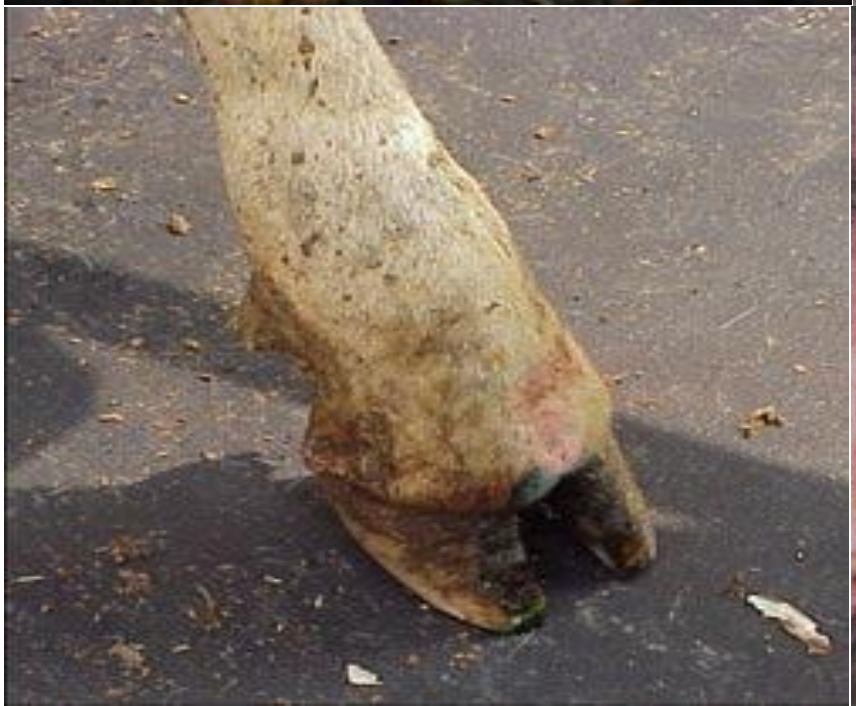
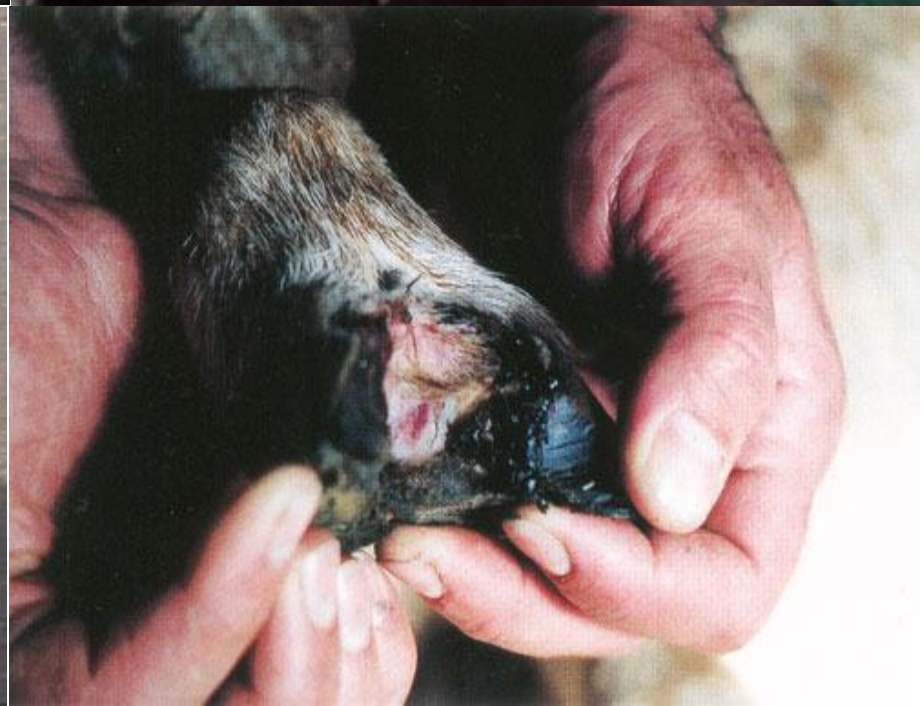
INFECTIOUS FOOT ROT (IFR)

Contagious foot rot, Infectious pododermatitis, foul in the foot





Definition

- It is contagious disease of ruminants, caused by *fusobacterium necrophorum*, characterized by inflammation of feet sensitive tissue resulting in severe interdigital dermatitis and lameness.

Etiology

- *Fusobactreium necrophorum* with other bacteria as Dichelobacter (bacteroides) melaninogenicus and nodosus. The organism produces proteolytic enzymes which destruct foot keratin resulting in horn separation.

Predisposing factors

- Wet muddy areas, stony ground or contain sharp gravel,
- chorioptic bovis infestation,
- mineral deficiency especially zinc and
- excessive wetting of interdigital space skin facilitate entrance of infection

Epidemiology

- **Distribution:**
  - The disease is worldwide distributed and present in Egypt.

- **Animal susceptibility**:

  Sheep, goats, cattle and buffaloes, all ages including young ones may be infected but it is more common in adults.

- **Mode of infection**:
  - ***Source of infection*:** The main source of infection is discharge from the feet of infected animals.

  - ***Mode of transmission***: The infection gain entrance through abrasion on the lower part of foot.

Pathogenesis

- Maceration of the interdigital skin from prolonged wet conditions underfoot allows infection with *F. necrophorum*.
- This initial local dermatitis associated with infection with *F. necrophorum* at the skin and the skin-horn junction, but the hyperkeratosis induced by this infection facilitates infection by *D. nodosus* if it is present.
- The preliminary dermatitis has been named 'ovine interdigital dermatitis' and is also called "foot scald".
- The infection is spread to adjacent tendon sheath, joint capsules or bone if delayed or ineffective treatment is adopted.

Clinical Signs

- Incubation period is 20 days, the disease is sporadic and a mortality rate is low.

- Infectious foot rot is characterized by fever (39-40 ^{o}C), swelling of coronet and interdigital skin causes blind fouls, sudden severe foot lameness usually in one limb or recumbency.

- Long continued irritation causes formation of wart-like mass of fibrous tissue or interdigital fibroma.

Postmortem lesions

- Dermatitis and necrosis of interdigital skin and S/C tissues with suppuration and involvement of tendon sheath and joints in complicated cases.

Diagnosis

- **Field diagnosis**:
  - The disease suspected from clinical signs as swelling of interdigital skin accompanied with foul odor beside the epidemiology and history of the disease.
- **Laboratory diagnosis**:
  - **Samples**: Pus, swabs from the lesions, blood and serum.
  - **Laboratory procedures**:
  - Examination of direct smear to see large number of a mixture of fusibacterium and bacteroides sp.
  - Hematological and serum biochemical studies.
  - Serotests.

Differential diagnosis

- **Foot abscess**, it characterized by extensive suppuration. The abscess occurs in a single claw on the foot
- **Other diseases with foot lameness include**:
  - Contagious echyma
  - Bluetongue
  - Foot and mouth disease
  - Ulcerative dermatosis
  - Strawberry foot rot
  - Laminitis

Treatment

- *Topical treatment*:
  - Most topical treatments require that all under run horn be carefully removed so that the antibacterial agent to be applied can come into contact with infective material.
  - Local applications include chloramphenicol (10% tincture in methylated spirits or propylene glycol), oxytetracycline (5 % tincture in methylated spirits), zinc sulfate (10% solution) and copper sulfate (10% solution).
- *Foot bathing* for treatment and control Foot bathing is a more practical approach to topical treatment and for control during transmission periods, when dealing with large numbers of sheep. Preparations suitable for footbaths include 5% copper sulfate, 5 % formalin and 10% zinc sulfate with or without a surfactant to aid wetting of tissues.
- *Systemic treatment*: Systemic antibiotic as Pencillin 10.000IU/kg, Erythromycin. Single 1M dose of 10 mg/kg, Long-acting oxytetracycline. Single 1M dose of 20 mg/kg. Lincomycin/spectinomycin. Single SC dose of 5 mg/kg lincomycin and 10 mg/kg spectinomycin.

Control

- Detection of infected cases and immediate isolation with early treatment.
- Culling of incurable cases and prevent of foot injury by avoiding muddy or stony yards.
- Provision of foot bath containing 5-10% formalin or cupper sulfate in a door way.
- Feeding of chlortetracycline to feed lot animals may reduce incidence (500 mg /head of cattle for 28 day then 75 mg /head throughout fattening period).