

foot rot

(Interdigital phlegmon, Foul in the foot)

ETIOLOGY

- Maceration of the skin by water, feces, and urine may predispose to injuries.
- Injury to the interdigital skin provides a portal of entry for infection.
- *Fusobacterium necrophorum* is considered to be the major cause of foot rot. It can be isolated from feces where it may survive as a saprophyte, which may explain why control is difficult. This organism can survive in moist soil.
- *F. necrophorum* is a gram-negative, nonspore-forming, nonflagellated, nonmotile, pleomorphic anaerobic bacteria. It has a lipopolysaccharide endotoxin that is capable of necrotizing activity.
- Other organisms, such as *Dichelobacter nodosus*, *Staphylococcus aureus*, *Escherichia coli*, *Arcanobacterium pyogenes*, and possibly *Bacteroides melaninogenicus* can also be involved.

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CLINICAL FINDINGS

- Research suggests that the incubation period of foot rot can be a week.
- The fore or, more commonly, the hind limbs can be affected, but more than one foot is rarely involved at the same time in mature cows.
- The first sign is swelling and erythema of the soft tissues of the interdigital space and the adjacent coronary band.
- The inflammation may extend to the pastern and fetlock.
- Typically, the claws are markedly separated, and the inflammatory edema is uniformly distributed between the 2 digits.



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CLINICAL FINDINGS

- The onset of the disease is rapid, and the extreme pain leads to increasing lameness.
- In severe cases, the animal is reluctant to bear weight on the affected foot.
- Fever and anorexia are seen.
- The skin of the interdigital space first appears discolored; later, it fragments with exudate production.
- As necrosis of the skin progresses, sloughing of tissue is likely to follow.
- A characteristic foul odor is produced.

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CLINICAL FINDINGS

- If the disease proceeds unchecked, weight loss is severe and milk yield is significantly reduced.
- Milk production may not recover during the current lactation.
- Open lesions can be infected with secondary invaders. If the necrotic lesion is located in the anterior region of the interdigital space, the distal interphalangeal joint can become infected.
- Hematogenous infection of the tissues of the interdigital space may account for peracute cases of foot rot, which are referred to as either “**blind**” or “**super foul**” This form of foot rot is characterized by the initial absence of a skin lesion, extreme pain, and the tendency to progress despite aggressive therapy.

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TREATMENT

- Treatment should be administered as soon as signs are observed.
- Most treated animals recover in a few days.
- Good results are obtained with penicillin G, IM, for 3 days.
- Early cases respond well to single doses of long-acting oxytetracycline.
- Sodium sulfadimidine solution IV or trimethoprim/sulfadoxine IV or IM, bid for 3 days, can also be used.
- High concentration of an agent in the target tissues can be achieved by a regional IV injection. Positive results have been obtained with penicillin or oxytetracycline.

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TREATMENT

- Local treatment is essential for some longstanding cases and in all instances in which the anterior region of the interdigital space has been compromised.
- A nonirritant bacteriostatic agent (such as nitrofurazone or a sulfa preparation) should be applied as a topical dressing.
- Bandages, if used, should be replaced daily.



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TREATMENT



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CONTROL

- Animals that are actively shedding infectious organisms should be isolated until signs of lameness have disappeared.
- Preventive use of a footbath with an antiseptic and astringent solution (eg, copper or zinc sulfate [7–10% in water]) has given beneficial results.
- Vaccines against *F. necrophorum* have failed because of the weak immune response to the bacterium.
- High levels of zinc fed as a supplement have a beneficial effect by improving epidermal resistance to bacterial invaders.

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CAUSES

- Bacteria Causing Disease Lives in Soil or Internally in Animal

DIAGNOSIS

- Symmetrical Swelling
- Foul Smell
- Broken Skin (ulcers) Between Toes
- fever
- Low production

TREATMENT

- Responds Well to systemic Antibiotics
- Wash Until Clean
- Topical Antiseptic

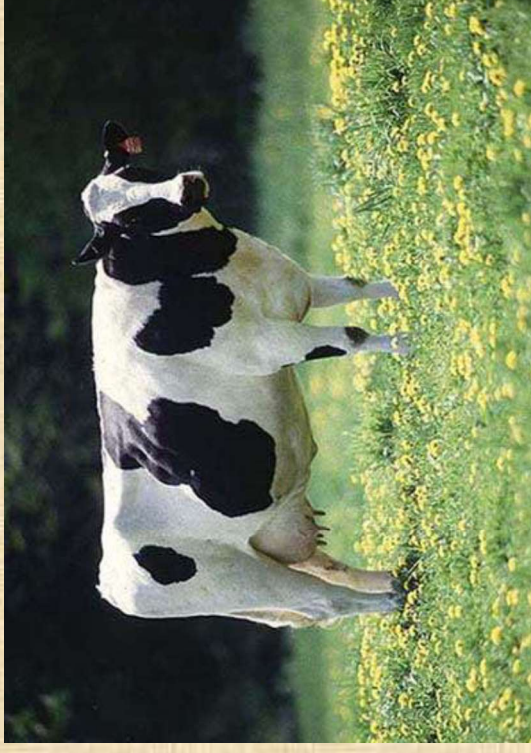


Digital dermatitis

(Hairy warts, Papillomatous digital dermatitis)

INTRODUCTION

- Emerging disease, first reported in Italy in 1974. In U.K.: Roger Blowey (1987).
- Highly contagious. Present day:
 - Worldwide distribution
 - U.K.: >70% dairy farms infected
- Leading cause of lameness:
 - Economic losses
 - Welfare issue
- Relatively underresearched:
 - Etiology not known with certainty
 - Pathogenesis only partially clarified
 - Transmission pathways unknown



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DEFINITION:

- A diffuse or circumscribed epidermitis of the digit at the coronary margin”.

ETIOLOGY

- Uncertain, more than one bacterium is involved.
- Dichelobacter, Treponema spp, spirochetes, Fusobacterium spp, and Campylobacter spp.
- virus plays a part in the pathogenesis of the disease, but none has been isolated to date

Digital dermatitis

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SIGNS:

- Lameness (not always!)
- No fever
- Typical lesions
 - Size:
 - Aspect:
 - Location:



diameter 1 – 6 cm

dependent on stage of disease

usually on plantar aspect of hind feet, on hairy skin between heel bulbs; in affected cows, frequently bilateral

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CLINICAL FINDING

- Erosive lesion
 - ❑ Hyperaemia, swelling, eczema
 - ❑ Erosion and ulceration of superficial epidermis
 - ❑ Surface lower than skin level
 - ❑ Red, bleeds easily
 - ❑ Intensely painful



Digital dermatitis

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CLINICAL FINDING

- Granulomatous lesion
 - ❑ Ingrowth of keratin, which develop into papillae
 - ❑ Elevated above skin level
 - ❑ Increased diameter
 - ❑ Less painful
 - ❑ Pungent odour



Digital dermatitis

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CLINICAL FINDING

- Proliferative lesion
 - ❑ Advanced hyperkeratosis; long papillae
 - ❑ Solid, dense aspect
 - ❑ Can become very prominent

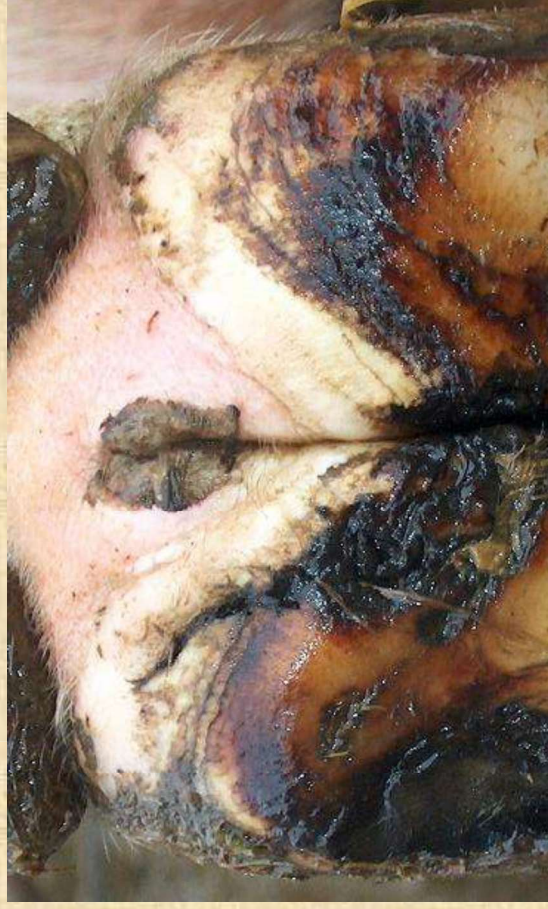


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CLINICAL FINDING

- Scabbed / regressing lesion
 - ❑ Lesions of any stage can regress after treatment
 - ❑ Black, rubbery scab; well demarcated
 - ❑ Less painful
 - ❑ After sloughing off, skin can be smooth, show a scar, or still be hyperkeratotic



Digital dermatitis **(Hairy warts, Papillomatous digital dermatitis)**

TREATMENT

- Acute lesions are initially treated topically.
 - lesion should be scrubbed clean with a stiff brush and soapy water, rinsed, and dried.
 - An antibiotic powder, such as oxytetracycline is applied and protected by a gauze pad held in place by a waterproof bandage.
 - Multiple treatments are usually necessary.
- Once a lesion has started to heal, topical spray may be applied on the lesion.
 - Soluble oxytetracycline or lincomycin-spectinomycin

Digital dermatitis (Hairy warts, Papillomatous digital dermatitis)

CONTROL

- Footbaths containing oxytetracycline or lincomycin-spectinomycin
- For optimal effect, the animals must be first walked through a bath containing clean water.
- Footbaths containing copper sulfate, zinc sulfate, or formalin have been found to be useful.

