



# A clinical and radiographic description of contagious ovine digital dermatitis

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## Abstract

Contagious ovine digital dermatitis (CODD) is an infectious foot disease of sheep and causes severe lameness. Currently a diagnosis is made on the basis of broad anecdotal descriptions. This study systematically describes the clinical and radiographic features, produced from the clinical examination of 908 sheep. Lesions were classified on the basis of their clinical appearance into five grades. Sheep with lesions typical of each grade were euthanased and their feet removed and radiographed. Radiographic abnormalities including soft tissue and bony changes were evident in feet with lesions graded 2-5.

## Introduction

Contagious ovine digital dermatitis (CODD) is a relatively new cause of lameness in sheep in the UK ([Harwood and others 1997](#)). The cause is still unknown, however spirochaete bacteria (*Treponema* spp.) have been associated with disease. A recent survey of sheep farmers revealed that CODD is now common, with farmer reported prevalence of 35%. On farm prevalence of affected sheep is 2.0%, but can be as much as 50% ([Angell and others 2014](#)). Currently, CODD is poorly defined in terms of its clinical presentation and there is no standard clinical lesion scoring system. Other treponemal diseases lead to extensive tissue damage including bony involvement—radiography can be used to investigate deeper tissue changes including bone.

## Methods

- On six farms over 1 year 908 sheep were identified as having CODD. The lesions observed on these sheep were used to develop a five-point lesion grading system.
- Sheep with lesions typical of the five grades were identified and, with the farmers consent, were euthanased on the farms using pentobarbital sodium (Pentoject; Animal Care). At post mortem the feet were removed and the digits radiographed.

## Results

### Clinical features of CODD (Figure 1)

1. Erosion/ulceration with/without hairloss specifically at dorsal coronary band.
2. Erosion/ulceration of the skin at the coronary band; partial (<50%) under-running of the hoof horn dorsally/abaxially.
3. Erosion/ulceration of the skin at the coronary band with 50%-100% under-running of the hoof horn with possible hoof horn avulsion.
4. Healing foot with the horn beginning to regrow but an active lesion still present.
5. Healed foot with deformation of regrown horn.

### Radiographic features of CODD (Figure 2)

1. No radiographic abnormalities evident.
2. Reduced radio-density in soft tissues (1 & 2); hoof horn separated (3); osteophytic change to P3 (4).
3. Reduced radio-density in soft tissues (1); osteophytic change to P3 (2); hoof horn avulsed (3).
4. Reduced radio-density in soft tissues (1); extensive demineralisation to P3 (2 & 3).
5. More normal soft tissue radio-density (1); reduced distance between P3 and foot outer margin (2); osteophytic change to P3 (3).

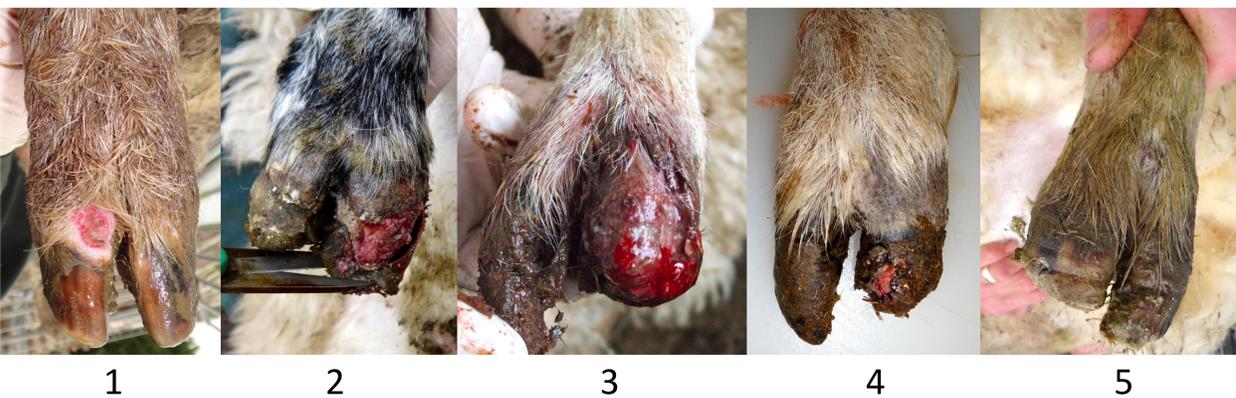


Figure 1: Clinical features of CODD, illustrating the different lesion grades

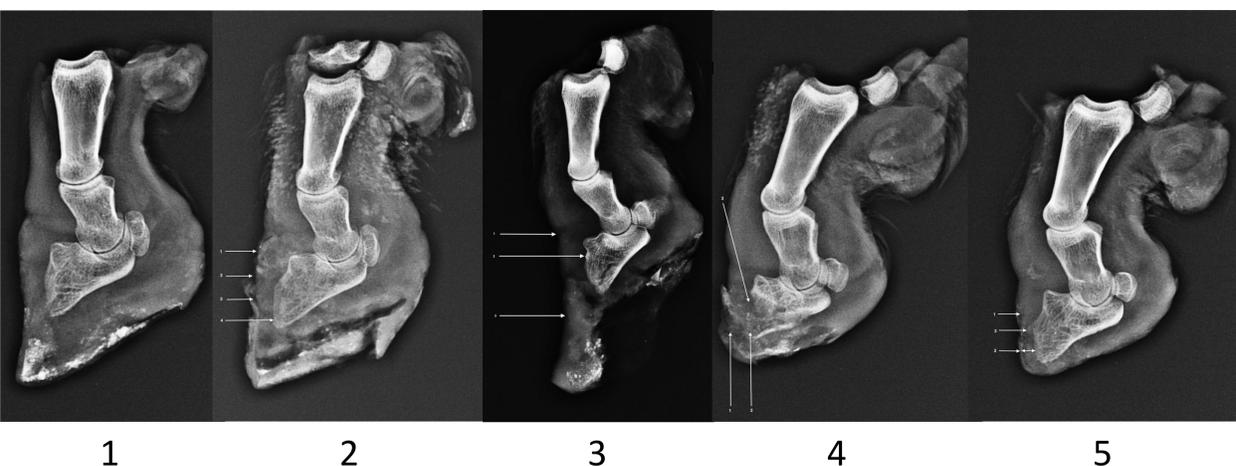


Figure 2: Radiographic features of CODD, illustrating examples of pathology seen in different lesion grades

## Conclusions

This paper helps to define CODD clearly and systematically in the form of a clinical description and a lesion grading system. The radiographic changes reveal deep and extensive damage to soft tissue and bony structures.

## References

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