Guidelines on the radiographic assessment of laminitis

The following guidelines are NOT meant to be an overview of how to assess a radiograph for laminitis. They are presented for the purposes of this study only, where we are trying to determine whether a few simple radiographic changes have occurred in study participants.

Although it is usual to take several radiographic views when assessing a case for laminitis, for the purposes of this study we will restrict feedback to changes visible on the lateromedial view only.

1. **Rotation of the distal phalanx and distal displacement of the distal phalanx**
   The length of line 1b becomes longer than line 1a indicating dorsal rotation of the distal phalanx (see figure).
   The length of lines 1a and 1b increases as laminitis progresses (distal displacement of distal phalanx).

2. **Coronary extensor (founder) distance**
   This refers to distal displacement of the distal phalanx (‘a sinker’).
   Line 2 may become longer as laminitis progresses and the hoof ‘sinks’. Using a radio-opaque marker to locate the coronary band is extremely useful when assessing this parameter.

3. **Sole depth at the toe (tip of the distal phalanx)**
   Line 3 may become shorter as laminitis progresses indicating that the tip of the distal phalanx has become displaced ventrally.

4. **Gas lines**
   Show up as a thin, radiolucent line parallel to the dorsal hoof wall. They may or may not communicate with the exterior at the level of the coronary band.

5. **Osseous changes**
   There can be many types of osseous change in the distal phalanx and these usually indicate a more chronic disease course.
   Osseous changes can include new bone growth, small fractures, osteolysis and bony inflammation and frequently alter the shape of the distal phalanx.

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**Lateromedial radiograph of a normal foot.**

Measurements can be made between the dorsal hoof wall and the dorsal aspect of the distal phalanx (1a and 1b), between the coronary band and the extensor process (line 2) and between the sole and the tip of the distal phalanx (line 3) to indicate anatomical changes that may occur in a foot as a result of laminitis.