The BEVA Field Guide To: The Flexed Dorsopalmar Radiographic Projection Of The Fetlock

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The flexed dorsopalmar (plantarodorsal for hindlimb) projection of the fetlock is arguably the most important radiographic technique for the early detection of potentially catastrophic fracture pathology in the athletic horse.

The projection is used specifically when lesions of the palmaro/plantarodistal condyles (highlighted in red below) are suspected.

It is the only radiographic projection that permits visualisation of the ‘fissure’ (‘unicortical’) fractures that often precede complete condylar fracture.

With good clinical vigilance and radiographic technique many fetlock condylar injuries can be detected before they progress to complete fracture. Only a small subset of injuries are radiologically silent or ambiguous and require MRI for diagnosis.

The projection is also used for the detection of palmar/plantar osteochondral disease (‘POD’ lesions/‘bone bruising’), although unless pathology is advanced the sensitivity and specificity of radiography for this condition is generally poor.

For both fissure fracture and POD lesion detection, multiple lesion-oriented exposures may be required.
The Ideal Image

symmetry of radiograph can be judged by appearance of medial and lateral epicondylar fossae

exposures should permit identification of trabecular pattern in distal cannon

Non-Diagnostic Images

Underexposed  Too flexed  Sesamoids obscuring distal cannon  Skewed
If pathology is suspected, multiple exposures should be obtained: condylar fissure (circled) is only clearly visible here in image (b).

**Tips:** Bring the leg forward and place on a block with height of 25-30 cm. Don’t fully flex the fetlock. The x-ray plate can rest on the heels or behind the foot. Make the initial projection horizontal and perpendicular to the fetlock. When screening for pathology, take multiple projections (proximodistal and distoproximal) to highlight different aspects of joint.
**Tips:** The assistant picks up the hindlimb and supports it with one arm under the hock, holding the X-ray plate flat against the dorsal aspect of the fetlock with the other/hold the limb so that the cannon is vertical.

Importance of obtaining multiple exposures with varying degrees of proximo/distal angulation illustrated here: both images on right are from same study, with fissure (arrow) only clearly visible in image (b).
Condylar Fracture
Palmar/Plantar Osteochondral Disease

Increased density/loss of trabeculation through region of condyle not obscured by superimposition of sesamoid/pastern

Increased density through condyle (circled) and large lucent defect in distal metatarsus (arrow)

Large lucent defects in distal metacarpal condyles (circled) typical of subchondral bone collapse that may occur with end-stage palmar osteochondral disease. Above two images are from the same horse, illustrating the effect of proximo/distal angulation on appearance of lesions.
Acknowledgement
BEVA would like to thank.....

References
