

When Imaging Really Matters in Orthopedics

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Most veterinarians would theoretically agree that good quality radiographs are important. In reality, many veterinarians make do with substandard quality radiographs. This may be due to poor equipment, but more often is due to an unwillingness to take the time to get proper technique and positioning. This presentation will work through orthopedic examples where proper imaging is vital to successful case management. Additionally, we will discuss when various imaging modalities are important vs. when less expensive options will suffice.

Poor images are generally related to one of several factors. The first is failure to obtain 2 orthogonal views despite universal agreement on the importance of this standard. With only one view, small fissures or even entire fractures can be missed. Related to this is the failure to obtain stressed views or obliques. In ligamentous injuries stress view are particularly important. A second common mistake is to have poor technique either because of incorrect settings or poor quality of developer chemicals. This can lead to the inability to note pathologic lesions such as early bone tumors or infections. Lastly, positioning can be critical despite being frustrating to achieve in some cases. The classic example is a slightly obliques pelvic radiograph that may cause one hip to appear worse or better than it actually is.

Certainly most orthopedic cases are managed using plain radiographs as the primary imaging modality, but there are times when advanced methods are important. These situations include the use of ultrasound to diagnose muscle or tendon injuries. Additionally, the use of computed tomography has become the standard of care for diagnosis of certain conditions such as elbow dysplasia. CT and magnetic resonance imaging may be necessary for certain neurologic conditions when routine films or myelography is not sufficient.

The use of intra-operative fluoroscopy has become more popular in veterinary medicine. The use of a C-arm facilitates minimally invasive repair of fractures through the use of external fixation, interlocking nails and screws. In almost every case, an open approach is an alternative so the practitioner must carefully consider the need to invest in the substantial cost of such equipment.