

Radiography and magnification

Procedure:

- Obtain non-obliques mediolateral and caudocranial radiographs of both stifles.
- Centre on the stifle and extend the collimation to include the hock.
- Include a calibration sphere positioned at the level of and alongside the patella.
- Dogs with cruciate disease have a radiographic stifle effusion.

Magnification and calibration

Every time you take a radiograph the resulting image is magnified. This occurs because the centre of the stifle sits above the plate, not at its surface (Fig. 1a). If surgery is planned on a magnified image an unexpected osteotomy will result. Removal of magnification is therefore critical before planning.

When taking radiographs for preoperative planning include a 25 mm x-ray calibration sphere (Fig. 1b). Position the centre of the sphere at the same vertical elevation above the plate as the patella. The resulting image (Fig. 3a) can then be zoomed to its actual size for osteotomy planning.

Do not use makeshift calibration markers. It is impossible to recognise that a round metal object is makeshift, its elevation or dimensions.

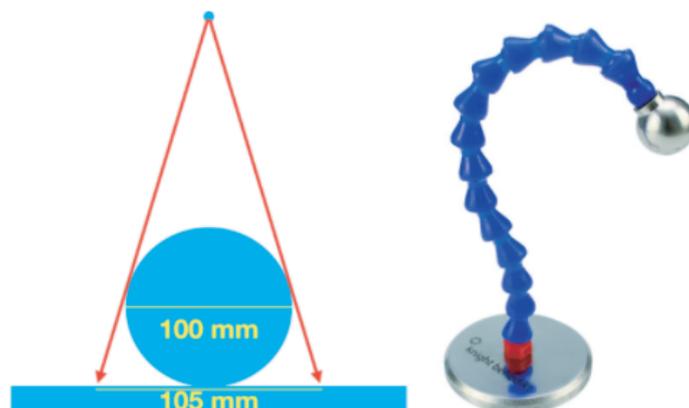


Figure 1a: Radiographic magnification. Figure 1b: A calibration sphere [courtesy of Knight Benedikt].

Positioning

Centre the x-ray on the stifle and extend the collimation include the hock (Fig. 2a, 2b). Position the limb for the mediolateral view so that the femoral and tibial condyles are superimposed. Slightly elevating the hip with a foam pad can be a useful aid in some dogs.

The stifle flexion angle does not affect the methods used for planning OssAbility procedures.

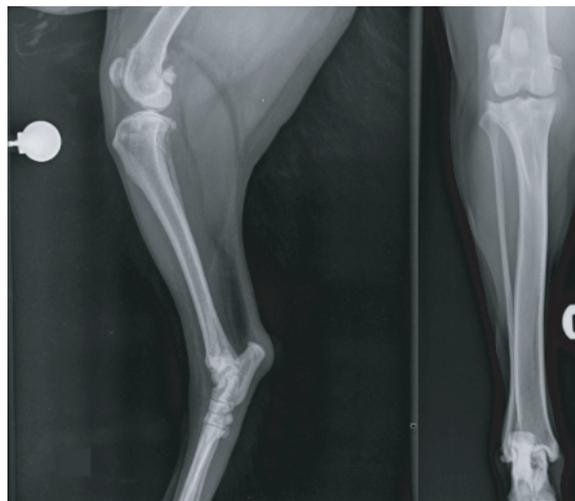


Figures 2a and 2b: Patient positioning with external aids [courtesy of VetSpecs].

Assessment

The earliest radiographic sign of cruciate disease is a stifle effusion. Note the compression of the stifle fat pad on its caudal side by a soft tissue opacity in Figure 3a. Assess radiographs for periarticular osteophyte formation, femorotibial subluxation and limb deformity. Displacement of the popliteal sesamoid may be seen in dogs with complete cruciate rupture.

Always look for neoplasia. If in doubt, get the radiographs assessed by a radiologist.



Figures 3a and 3b: Correctly positioned mediolateral and caudocranial views of the canine stifle demonstrating femoral and tibial condylar superimposition, joint effusion, periarticular osteophyte formation, displacement of the popliteal sesamoid, and a calibration sphere. Note the symmetrical positioning of the patella and fabellae on the caudocranial view which allows for assessment of limb deformities.