

Corrective Osteotomy for Limb Deformity

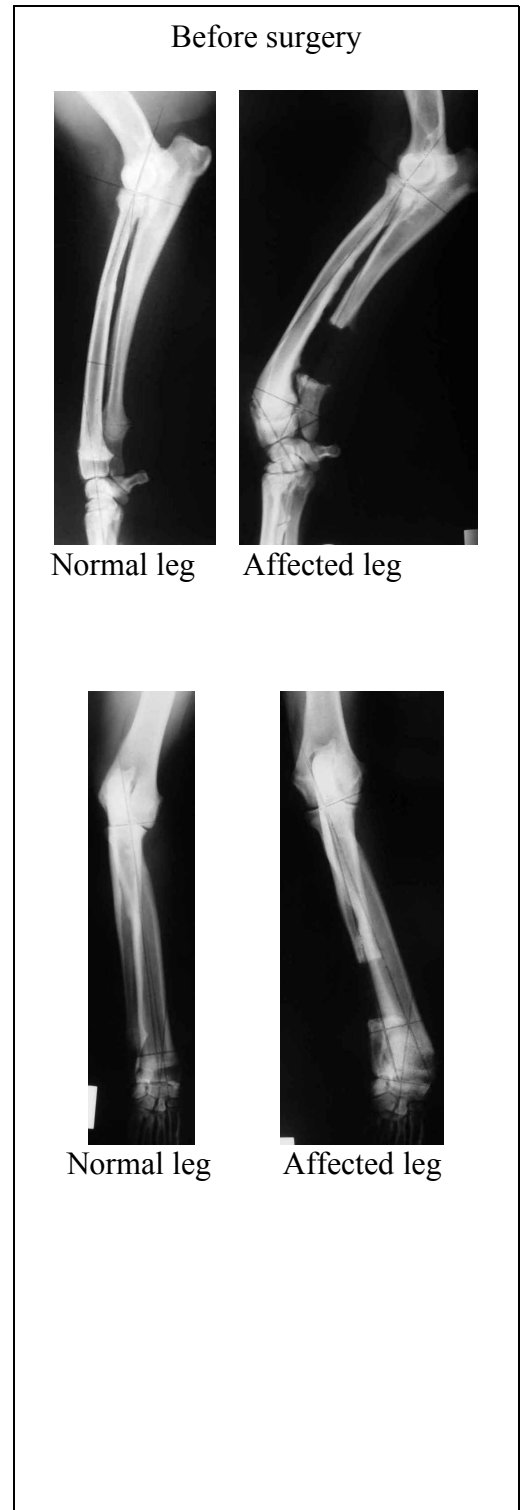
Limb deformities can occur in dogs, as with other species, including humans, and are typically noted during the growth phase i.e. prior to about 10-12mths of age. Sometimes, particularly in smaller breeds, patients present for assessment when they are skeletally mature.

Limb deformities typically occur in the forelimbs and are caused by a disruption to the normal growth of a long bone, particularly the radius and ulna, the bones that make up the forearm or antebrachium. Growth disruption occurs when trauma or disease causes the cartilage cells in the long bone growth plates (where the bones grow from) to die or stop functioning.

The most common cause is injury to the growth plate. A typical history from a client is that the puppy sustained an injury to the limb that caused initial pain/lameness, but that appeared to heal without incident. However some weeks to months later a change in the position of the foot or angulation of the limb became progressively more evident. Certain diseases, nutritional factors and genetic influences can also contribute to altered growth and limb deformity.

Thorough preoperative evaluation is mandatory and **here at the VSC we have sophisticated digital imaging radiography, as well as CT capability**, that allow very precise measurements, with 2 and 3 dimensional reconstruction, to be made when doing an assessment for a limb deformity. This precision is critical for planning of surgical intervention.

Limb deformities may be mild and not influence the function of the leg thereby not requiring correction. However in some situations, the deformity becomes severe as the puppy grows and requires corrective surgery. The timing of surgery varies with many factors and may be performed while the puppy is still growing or once skeletal maturity is reached. In some instances several staged procedures may be required. This is due to the fact that limb growth is a dynamic process and changes constantly during the growth phase.



Surgical techniques that can be employed include corrective osteotomy (cutting and realignment of the bone) with fixation using traditional bones plates or external fixation devices. A more specialised and dynamic procedure is the use of circular ring external fixation devices. These allow for progressive correction and accommodate for angular and rotational corrections as well as for increasing limb length (if required) over time. The apparatus is modified daily, usually by the owner, to progressively resolve the deformity and increase limb length.

Procedures for antebrachial deformity corrections are complicated, require sophisticated equipment and advanced surgical training. They require a significant commitment from the owners as well as the veterinary team and of course the patient. **Costs can vary enormously and depend on the nature and severity of the deformity, age of the patient, equipment used and the number of procedures required.** The risks and potential complications are as for any advanced surgical procedure.

6 weeks after surgery

