ESVOT
CONGRESS
2006

PROCEEDINGS

MUNICH, Germany
7th-10th September

“The Cutting Edge in Veterinary Orthopaedics”

European Society of Veterinary
Orthopaedics and Traumatology
Hind limb alignment in the dog to treat patellar luxation: a retrospective study of 39 cases (2001-2005)
Massimo Petazzoni
Veterinary surgeon, Milan, Italy

INTRODUCTION
Patellar luxation is recognized as one of the most common cause of lameness in dogs. The aetiopathogenesis of canine patellar luxation has been extensively reviewed but is still poorly understood. While medial patellar luxation has been reported to affect with the same frequency either in small or large breed, lateral patellar luxation seems to be more common in large breed. Patellar luxation has been classified into four grades according to its clinical findings. This classification fails into giving any relevant information on the possible presence of underlying bone deformity causing the disease. A variety of surgical techniques have been proposed with the aim of restoring the position of the patella in the center of the condyles. These different techniques, ranging from soft tissue procedures, femoral trocleoplasty and tibial tuberosity transposition, are usually either or not combined according to the severity of the luxation. Patellar luxation is primarily a developmental condition with traumatic luxations being less common. Congenital, developmental or post-traumatic deformities can affect the path of the quadriceps mechanism and its tendon leading to patellar luxation. For this reason in recent years an increasing number of surgeons proposed the hind limb alignment as an elective method of treatment for patellar luxation. This new approach is based on a complete radiographic examination of the affected limb for the preop evaluation of the level of the deformity/ies leading to the patellar luxation.

AIM OF STUDY
To identify associations between hind limb deformities and the development of medial and lateral patellar luxations in dogs.

MATERIALS AND METHODS
All patients undergoing surgical hind limb alignment from 2001 to 2005 were included. Inclusion criteria were: a) clinical evidence of lameness related to patellar luxation, b) preoperative and postoperative radiographic evaluation with the following views: medio-lateral tibia, antero-posterior tibia, and antero-posterior or femur; (c) documentation indicating the type of malformation corrected, (d) clinical and radiographic control at 8 weeks. Thirty-nine cases were selected out of a total of 61 surgical alignments performed.

RESULTS
Nine dogs (20%) had lateral luxation, 30 had medial luxation. One small, 2 medium, 4 large and 2 giant breeds had lateral luxation while 8 toy, 9 small, 5 medium, 7 large and 1 giant had medial luxation. In 11 dogs with medial luxation the cranial cruciate ligament was damaged. Most common malformations were: Internal femoral torsion, distal femoral valgus and internal tibial torsion in lateral patellar luxations; external femoral torsion, distal femoral varus, external tibial torsion and proximal tibial valgus in medial patellar luxations. Valgus and varus deviations of the proximal tibia were corrected by proximal medial or lateral closing wedge osteotomies. When a concomitant cranial cruciate ligament deficiency was diagnosed the correction has been done through a TPLO blade, to correct the tibial plateau angle as well. Valgus and varus deviations of the distal femur were corrected by distal, medial or lateral, closing wedge osteotomies. All the osteotomies were treated with internal fixation (plates and screws).

CONCLUSIONS
None of these animals had tibial crest malformations, therefore transposition of the tibial crest was never performed. Most animals were treated at a very young age (mean 22 months, median 12 months) consistent with the condition being a developmental one. Lateral luxation was found almost exclusively in medium, large and giant breeds, while medial luxation occurred in animals of all sizes this being consistent with the current literature. Levels and degrees of deformities were in all cases associated with patellar luxation. Lateral luxations were usually present in dogs with internal femoral torsion often associated with distal femoral valgus as reported in man. Medial patellar luxation could be a predisposing factor for cranial cruciate ligament deficiency.