



# COMPANION ANIMAL

Research Award



## The influence of several factors on the development of subsequent meniscal injury after tibial plateau leveling osteotomies: findings of second-look arthroscopies in 33 stifles

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### Introduction

Tibial plateau leveling osteotomy (TPLO) is the most commonly performed surgical procedure to manage cranial cruciate ligament (CCL) rupture in dogs (1). Patients with a complete tear of the CCL have an increased risk of developing intra-articular changes and postoperative complications (2). Subsequent meniscal tears are a frequent cause of postoperative lameness (1). The aim of our study was to look at factors that might contribute to lameness following TPLO, to evaluate their effect on the occurrence of subsequent meniscal injuries and to investigate these by second-look arthroscopies. Our hypothesis was, that a steep postoperative tibial plateau angle (TPA) leads to an increased risk of developing subsequent meniscal injury.

### Materials and methods

Client-owned dogs with either recurrent or persistent lameness following stifle arthroscopy and TPLO that underwent second-look arthroscopy were included. Age, breed, body weight, the presence of a partial or complete tear, postoperative TPA, radiographic osteoarthritis score and joint effusion were recorded. All factors were statistically analysed to evaluate their influence on subsequent meniscal tears. All patients had arthroscopy at the initial TPLO procedure and the injury to the CCL was scored. TPAs above the recommended postoperative grade 5° (3) were defined as steep. The presence of a subsequent meniscal injury was confirmed during second-look arthroscopy.

### Results

Thirty patients presented for persistent lameness or acute recurring lameness were included. Thirty-three second look arthroscopies were performed. Complete rupture of the CCL was significantly associated with an increased risk of subsequent meniscal injuries. None of the other evaluated parameters showed an influence on the occurrence of meniscal lesions. A steep postoperative TPA did not increase the risk of subsequent meniscal injuries.

### Discussion/Conclusion

In accordance with the current literature, patients with complete rupture of the CCL were at higher risk of developing subsequent meniscal injuries (2). Our study could not confirm the hypothesis that steep postoperative TPAs lead to subsequent meniscal injuries.

### Literature

- (1) Fitzpatrick N, Solano MA. Predictive variables for complication after TPLO with stifle inspection by arthrotomy in 1000 consecutive dogs. *Vet Surg* 2010;39:460-474.
- (2) Hulse D, Beale B, Kerwin S. Second look arthroscopic findings after tibial plateau leveling osteotomy. *Vet Surg* 2010;39:350-354.
- (3) Slocum B, Slocum TD. Tibial plateau leveling osteotomy for repair of cranial cruciate ligament rupture in the canine. *Vet Clin North Am Small Anim Pract* 1993;23:777-795.