

## Sulcus Reorientation For Treatment Of Medial Patella Luxation In Dogs

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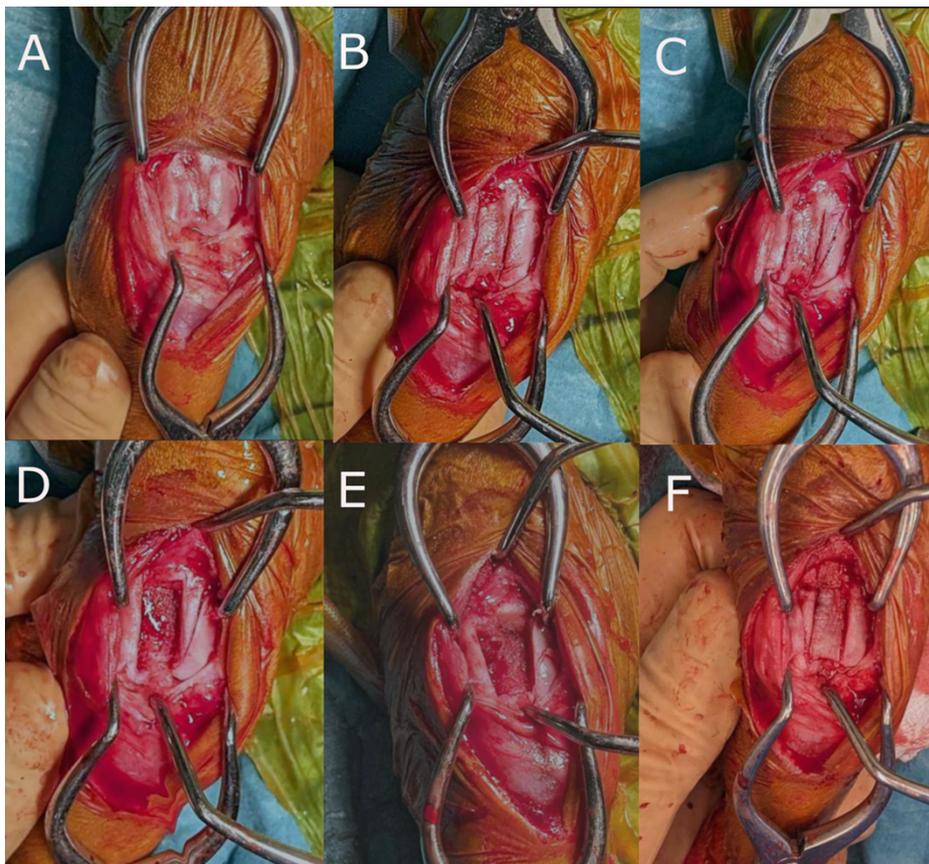
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The aim of this study is to describe the novel Sulcus Orientation Realignment Technique (SORT), performed in conjunction with traditional techniques<sup>1</sup>, for the management of medial patella luxation (MPL) in dogs with excessive distal femoral varus (DFV) deformity.

A retrospective study of clinical records was performed for 13 dogs (18 stifles). Inclusion criteria was dogs with MPL and an anatomic lateral distal femoral joint angle (aLDFA)  $> 100^\circ$ ; based on the biomechanical impact of this level of varus.<sup>2</sup> SORT involved removing a wedge from the medial side of a trochlear block recession sulcoplasty and transposing it to the lateral side, thereby reorienting the sulcus in line with the quadriceps extensor mechanism (Figure 1). The wedge angle (WA) was determined by subtracting  $98^\circ$  (normal femoral varus)<sup>3</sup> from aLDFA.



*Fig 1: Progressive intraoperative photos as block recession then SORT wedge are cut before removal and replacement in opposite positions.*

Dogs had MPLs Grades 2-4, weighed between 1.5-25kg, with a median aLDFA of  $105.5^\circ$  (range  $101-117^\circ$ ), and a median calculated WA of  $7.5^\circ$  (range  $3-19^\circ$ ), although in five stifles the WA was reduced to  $10^\circ$  due to anatomical

constraints. Five of the 13 dogs were treated bilaterally. Patella luxation resolved in all cases, lameness resolved in 12/13 dogs; the remaining dog had barely perceptible, intermittent lameness, at long-term follow up. No major and only one minor complication occurred.

SORT is proposed as a novel, less technically challenging alternative to distal femoral osteotomy for dogs with MPL and excessive DFV deformity.

#### ***Bibliography:***

1. Arthurs GI, Langley-Hobbs SJ. Complications associated with corrective surgery for patellar luxation in 109 dogs. *Vet Surg* 2006;35:559-566.
2. Lee J, Sim H, Jeong J et al. Biomechanical analysis of canine medial patellar luxation with femoral varus deformity using a computer model. *BMC Vet Res* 2020;16:1-9.
3. Tomlinson J, Fox D, Cook JL, Keller GG. Measurement of femoral angles in four dog breeds. *Vet Surg* 2007;36:593-598.

#### ***Ethical Approval statement:***

The authors believe this retrospective study meets the animal care guidelines. Animal ethics committee approval could not be obtained due to the retrospective nature of the study, with all treatments having occurred prior to the commencement of this study. All treatments were performed in line with humane animal treatment guidelines, with best practice veterinary care being provided, as clinically indicated, by a registered surgical specialist, with informed client consent. Client consent forms completed at the time of surgery included a media release consent (for promotional material and publication) for the treating veterinary business. Consent for access and inclusion of patient data collected by VetSOS, Animal Referral Centre and North Coast Veterinary Specialist Centre was obtained. This study presents detailed treatment information including analgesia provided to these patients, demonstrating appropriate clinical treatment. Long-term phone follow up for all patients was clinically indicated with the timeframe at the discretion of the treating veterinarian.