AWARDS WINNERS IN OSLO 2010

THE NICOLA’S FOUNDATION YOUNG RESEARCHER AWARD (< 40Y)
Sponsored by The Nicola’s Foundation Prize money: 1,500 EUR Winner: Coen Wijdicks
Title: Mechanical Properties of the primary medial knee structures.

AWARD FOR BEST PAPER IN LIGAMENT AND BIOMECHANICS
Sponsored by Smith & Nephew Prize money: 2,000 USD Winner: Colin Anderson
Title: The Kinematic Impact of Anteromedial and Posterolateral Bundle Graft Fixation Angles on Double-Bundle Anterior Cruciate Ligament Reconstructions.

RESEARCH GRANT IN SPORTS TRAUMATOLOGY AND REHABILITATION
Sponsored by DJO Prize money: 15,000 USD Winner: Olaf Lorbach
Title: Evaluation of the biomechanical properties and the impact of Patellofemoral joint pressure of different autografts in MPFL reconstruction: facia lata versus gracilis tendon.

PORTO AWARD “Innovation in Arthroscopy”
Prize money: 2,500 EUR Winner: Nicolas Pujol
Title: Anatomic double bundle ACL reconstruction using a bone-patellar tendon-bone autograft.

BEST POSTER AWARD
Sponsored by ESSKA Prize money: 500 EUR

Q1. What is the significance of double-bundle ACL reconstructions and how do they improve outcomes?

The potential that double-bundle ACL reconstructions could improve the outcomes of ACL injuries has generated a large body of recent research. However, many variables exist in how double-bundle ACL reconstructions are performed that may be limiting the success of the procedures. Our study focused on graft fixation angles, which are the angles that the knee is flexed to during fixation of each graft. Our study showed that with a bone-patellar tendon-bone autograft and a separate tensioning of the bundles, for BPTB graft use, the AM is anatomically restored normal knee kinematics which might improve long term results especially in the prevention of patellofemoral osteoarthrits.

Q2. What factors influence the mechanical properties of the primary medial knee structures?

Quantitative anatomy and biomechanical studies have recently recognized that the individual components of these structures have different functional elements. The superficial MCL has 2 tibial attachments that effectively divide it into 2 functional units—the proximal and distal divisions. The posterior oblique ligament (POL) consists of superficial, central, and capsular arms, with the capsular arms being the main component. The deep MCL is composed of meniscofemoral and meniscotibial components. Despite uncertainty about the most appropriate management, pathological changes in the medial knee raise concern. Thus, surgical reconstructions are usually necessary for symptomatic chronic medial knee pathologies. Our study showed that the potential that double-bundle ACL reconstructions may take these results into account and should consider surgical medial knee structures—whose function and importance has been recently quantified—have not yet been well described. Identification of the maximum structural loads tolerated by the proximal and distal tibial attachments of the superficial MCL, the central arm of the POL, and the deep MCL is necessary to guide strength requirements for fixation and reconstruction of these structures for optimal knee biomechanics.

Q3. How do double-bundle ACL reconstructions differ from traditional ACL reconstructions?

The pathology of patellofemoral instability involves multiple factors. Therefore, an anatomic treatment option is difficult to achieve. Even if MPFL rupture or elongation is mostly a consequence of the dislocation but not the initial instability factor, it provides good clinical short term results with low dislocation rates. In order to be anatomically possible, the autograft or allograft for the repair should be comparable in the biomechanical properties to the native MPFL. As the semitendinosus tendon as well as the gracilis tendon show significant biomechanical differences compared to the native MPFL, other alternatives might improve anatomically restore normal knee kinematics which might improve long term results especially in the prevention of patellofemoral osteoarthrits.

Q4. What is the importance of the knee's functional range of motion?

At last, this hybrid method is suitable for all graft types (hamstrings, quadriceps tendon, allografts). I'm available for any further questions, if needed.

Best regards,
Nicolás Pujol