weeks are at significantly increased rate of observed concurrent chondral and medial meniscal injuries. While time to surgery significantly correlated with rates of observed concurrent pathology, after approximately 8 weeks, the rates of articular chondral injury increase proportionately with time from injury in both the skeletonally mature and skeletally immature populations.

Category: Knee - ACL

Patients with Bilateral ACL Reconstruction (ACLR) Have 3x the Rate of Posterior Tibial Slope Greater than 12-Degrees Compared to Unilateral ACLR: MRI and Radiographic Evaluation

Abstract ID# 23359
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Summary:
The purpose of this study is to compare PTS angles measured on x-ray and MRI between patients who had bilateral ACL tears compared to those who had only sustained a unilateral ACL tear.

Data:
Purpose: Increased posterior tibial slope (PTS) is a risk factor for primary anterior cruciate ligament (ACL) tear, as well as subsequent ACL graft tear. Prior literature has shown conflicting relationships between an increased PTS and bilateral ACL tears. We aimed to compare PTS angles, as well as the rate of markedly increased PTS (>12° on lateral radiograph; >7° on MRI), between patients who underwent bilateral ACL reconstruction (ACLR) vs unilateral ACLR. A secondary purpose was to examine whether these associations remained consistent on both plain radiographs and MRIs.

Methods: We retrospectively identified patients who underwent primary ACLR at our institution from the years 2012 to 2020. Patients with non-simultaneous bilateral ACLR (n=53) were matched to those with unilateral ACLR (n=53) by age, sex, and BMI. Exclusion criteria were: rotated lateral radiographs, inadequate quality MRI, concomitant ligament injury or fracture. Unilateral ACLRs with less than 5-year follow-up or revision were further excluded. Three blinded readers measured PTS on lateral radiographs, while medial (MPTS) and lateral (LPTS) were measured on MRI. Bivariate regression was performed to determine correlation between radiograph and MRI measurements.

Results: PTS in the bilateral ACLR cohort was significantly greater than the unilateral ACLR cohort on radiographs (11.26° vs 10.13°, p=0.044) and LPTS (7.32° vs 6.08°, p=0.012), but not MPTS (4.55° vs 4.17°, p=0.467). The percentage of bilateral patients with radiograph PTS >12° was 41.0%, compared to 13.2% in unilateral cohort (p=0.016). The bilateral cohort had a significantly greater rate of LPTS >7° compared to unilateral patients (53.8% vs 32.1%, p=0.016), but not MPTS (p=0.467). On MRI, LPTS (5.93° ± 3.20°) was significantly greater than MPTS (5.12° ± 2.78°; p<0.001). There was weak correlation between MPTS-radiograph (R=0.24, p=0.02) and LPTS-radiograph was not significantly correlated (R=0.03, p=0.810). Conclusion: Patients who underwent bilateral ACLR had significantly greater PTS on radiographs and LPTS on MRI compared to those with unilateral ACLR. The rate of PTS >12° was 3.1x greater among bilateral ACLR compared to unilateral ACLR. PTS measurements on radiographs demonstrated weak-to-negligible correlation with MRI measurements, suggesting future normative PTS values should be reported specific to the imaging modality.

Category: Knee - ACL

The Covid 19-Related Lockdown Increased The Rate of Cyclops Syndrome After ACL Reconstruction for Patients With Unexpected Home-based Self-Guided Rehabilitation

Abstract ID# 21374
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Summary:
Exceptional measures related to the COVID-19 led to the stop of rehabilitation with physiotherapist after ACLR changing the postoperative social habits and leading to self-guided rehabilitation with a significant increase of the rate of cyclops syndrome.

Data:
Introduction After Anterior Cruciate Ligament Reconstruction (ACLR), complete extension should be recovered before the 6th week otherwise the risk of cyclops syndrome is significantly increased. The COVID 19 pandemic has led to a lockdown and to the absence of supervised rehabilitation with physiotherapist for several weeks, requiring self-made rehabilitation for patients operated just before this lockdown. The hypothesis was that the rate of cyclops syndrome increased during the lockdown with self-guided rehabilitation with a significant increase of the anterior arthrolysis rate. Methods A COVID series cohort of 72 patients operated with hamstrings graft for ACLR between February 10 and March 16, 2020 was a part of the rehabilitation of the first 6 postoperative weeks done during the lockdown with videos on a dedicated website. A clinical examination was performed at a minimum follow-up of 1 year with analysis of the range of motion, IKDC, Lysholm, Tegner and ACL-RSI scores. This series was compared to a matched-paired control cohort of 72 patients operated in 2019 with a complete classical postoperative supervised-rehabilitation with a physiotherapist. Results In the COVID series, mean follow-up was 14.5 months, rate of second surgery for clinical cyclops syndrome was 11.1% (8 patients). The rate was 1.4% in the control series with a statistical difference (p=0.01). In the COVID series, anterior arthrolysis was done with a mean delay of 8.6 months after the primary surgery, four patients had another surgery (3 for meniscal procedure, one for device removal). Mean Lysholm was 86.6 ± 14.1 (range, 38-100); Tegner was 5.6 ± 2.3 (range 1-10); Subjective IKDC was 80.3 ± 14.7 (range 33-100) and RSI-scale was 77.3 ± 19.4 (range 33-100) in the COVID series. Conclusion Exceptional measures related to the COVID-19 led to the stop of rehabilitation with physiotherapist after ACLR changing the postoperative social habits and leading to self-guided rehabilitation with a significant increase of the rate of cyclops syndrome. The dedicated website wasn’t enough efficient to support unexpected self-guided rehabilitation. Self-guided rehabilitation could benefit of improvement of interactive that must be at least as effective as supervised-rehabilitation methods.

Category: Knee - ACL

Mid-Term Outcomes Of Repeated Revisions Anterior Cruciate Ligament (AcI) Reconstructions With Allografts In Isolate And Complex Cases Of Multiple Failures

Abstract ID# 21982
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Summary:
Good mid-term clinical results can be obtained after repeated ACL revision with allograft in patients that experienced multiple failures, however, who need additional procedure due to malalignment or post-meniscectomy syndrome reported lower objective and subjective results.

Data:
Background: Anterior Cruciate Ligament (ACL) revision reconstruction are always complex scenarios due to eventual associated meniscal and cartilage lesion or degeneration. Nevertheless, these procedures have reached a satisfactory return to impact activity rate, and so the occurrence of an ACL revision reconstruction failures is destined to increase. Only few studies with a limited number of patients focused on clinical outcomes of multiple ACL revision reconstruction reporting contrasting results. Purpose: To evaluate the mid-term clinical outcomes of a cohort of patients who underwent multiple ACL revision reconstruction. The hypothesis was that patients with pre-existent meniscal deficiency conditions, malalignment and cartilage degeneration would have obtained lower results. Study Design: retrospective cohort study Methods: All cases of Multiple ACL Revisions performed with Allograft tissue at one single sport-medicine institution were extracted and patient’s whith a minimum 2 years of follow-up included. WOMAC, Lysholm, IKDC, Tegner activity level before injury and at last follow-up was collected and laxity evaluated with KT-1000 arthrometer and KIRA triaxial accelerometer. Results: From a cohort of 241 ACL revision, 28 patients (12%) with Repeated ACL Revision reconstructions were included. Fourteen cases (50%) were...