similar cartilage regeneration (31.3% to 41.7%). In consistency with previous studies, the integrity of MMPR played a minor role in cartilage regeneration. This leads to the interpretation that healing rate and cartilage regeneration are not correlated with clinical outcome scoring. Discussion: An HTO could unload the pressure in the medial compartment, thus relieving varus-induced medial knee pain. According to previous studies, HTO alone without MMPR repair achieved favorable outcomes. Lee et al. and Ke et al. also described similar findings in their cohort studies. The beneficial effects of concurrent MMPR repair during HTOs increase the rate of meniscal healing. However, long-term follow-up should still be conducted in order to further investigate whether the repair technique could help provide longer survivorship of the HTOs. Conclusions: Concurrent MMPR repair during HTOs presented with a better MMPR healing rate but similar cartilage regeneration rate in short-term to mid-term follow-up. However, a better healing rate was not associated with higher clinical scores. For deeper and more extensive conclusions to be drawn, follow-up should be continued long-term.

Category: Knee - Meniscus

Survivorship And Reoperation of 324 Consecutive Isolated or Combined Arthroscopic Meniscal Allograft Transplantation Using Soft-Tissue Fixation

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Summary:
The female sex and the need to combine MAT with cartilage procedure or ACL reconstruction could result in an increased rate of clinical failure at a mid-term follow-up.

Data:
Introduction: Meniscus allograft transplantation (MAT) is an effective treatment for relieving symptoms and improving knee functions in patients who experience symptomatic unicompartamental knee pain following a previous meniscectomy. However, in the literature there is a paucity of studies assessing the survival rate and prognostic factors of soft-tissue MAT. The present study aimed to report the survivorship of a large single-center cohort of consecutive patients treated with arthroscopic MAT using soft tissue technique and investigate variables that could potentially influence failures and outcomes. METHODS: 364 consecutive MAT performed in a single Institution between June 2004 and April 2019 were screened and assessed for eligibility. Subjective clinical scores (Lysholm score, Tegner Activity Scale and VAS) were collected pre-operatively and at 2 years, 5 years, 7 years and 10 years follow-up. Two survival analyses were performed using the Kaplan–Meier curves with (SF) surgical failure and (CF) clinical failure as endpoints. In addition, univariate analyses were performed using reoperations, surgical failure and clinical failure as endpoints, and different demographic and surgical characteristics as endpoints. RESULTS: 324 consecutive patients were evaluated at a mean follow-up 5.7 ± 3.0 years. Of them, 189 (58%) underwent an associated surgical procedure. A total of 22 patients (6.8%) were considered Surgical Failures. A significant improvement of all the PROMs was present between the pre-operative status and the last follow-up (p<0.001) with no significant decrease over time. Moreover, 70 (21.6%) patients were considered Clinical Failure: the need for concomitant Cartilage procedures (OR=0.16, p=0.001) or ACL reconstruction (OR=0.40; p=0.007) were predictors of failure. Finally, a lower survival rate was reported in Females (p=0.007) and in patients who required cartilage surgery (p=0.014). In particular, the latter group showed nearly half the survival rate with respect to those with no cartilage procedures at 10-year follow-up (36.4% vs. 71%), (p=0.029). DISCUSSION AND CONCLUSION: The female sex and the need to combine MAT with cartilage procedure or ACL reconstruction could result in an increased rate of clinical failure at a mid-term follow-up. The present study results help the surgeon correctly set patients’ expectations regarding MAT survival and clinical failures. In particular females and patients with focal cartilage defects have nearly half the survival rate at long-term follow-up.

Category: Knee - Meniscus

Experimental Model of Medial Meniscus Posterior Root Tear Increases the Severity of Cartilage Damage in Rabbits

Abstract ID# 21404
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Summary:
Experimental model of medial meniscus posterior root tear increases the severity of cartilage damage in rabbits

Data:
Background Magnetic resonance imaging (MRI) is ideally suited for the investigation of joint diseases by virtue of its excellent soft tissue contrast, high spatial resolution, multplanar capability, ability to allow direct visualization and to quantify cartilage thickness and volume distribution under normal and pathologic conditions. The main objective of this study was to identify and evaluate early osteoarthritic changes using high resolution magnetic resonance imaging after surgical release of medial meniscus posterior root in rabbit knees. Methods Knee osteoarthrisis (OA) was experimentally induced by medial meniscus posterior root transection in the right knees of 12 male rabbits. Knees were evaluated with high MRI at baseline, at 8- and 16-weeks post-surgery. Contralateral knees were used as healthy controls. The evaluation of the cartilage thickness was carried out by two independent observers and the measurements were performed on the two femoral condyles and the tibial surface. Results MRI before knee surgery disclosed no cartilage or bone abnormalities in any of the studied animal. The radiological alterations consisted of thinning of cartilage, sclerosis of the subchondral bone. Significant decrease in cartilage thickness was observed after 16-weeks of follow-up (p=0.023). Meniscal extrusion was evident after 8 weeks of post-surgery in all 12 animals after meniscal root release. Conclusions This study develops a novel model of knee OA that can aid in the early diagnosis of cartilage injury. These changes can be a promising therapeutic target, which promotes the interest of this model. Investigation of early osteoarthritic changes may lead to understanding of when and how rapidly knee OA develops after meniscal root injury.

Category: Knee - Meniscus

The Lateral Menisco-Tibial Ligament is a Restrictor of Radial Movement of the Lateral Meniscus, its Injury Increases Meniscal Extrusion and its Repair and the Lateral Apsulodesis Technique Restores the Extrusion to its Native Values

Abstract ID# 21853
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Summary:
This study determines the role of the lateral menisco-tibial ligament in the phenomenon of meniscal extrusion and analyses the biomechanical consequences of its repair as well as the capsulodesis technique.

Data:
Introduction. Previous studies have hypothesized that the lateral menisco-tibial ligament and the recently described Menisco-Tibio-Popliteus-Fibular Complex act together as a restrictor of the radial mobility of the lateral meniscus. The capsulodesis technique was described in 2017 as a quick and cheap solution to reduce meniscal extrusion after lateral meniscal allograft transplantation with satisfactory results at two and seven years of follow-up. The purpose of this study was to determine the function of the lateral menisco-tibial ligament in terms of radial mobility of the lateral meniscus as well as load distribution on the lateral tibial plateau and to determine if its repair as well as the capsulodesis technique restore this mobility and load to their native values in a biomechanical model using human cadaveric knees. Methods. Eleven human, fresh-frozen cadaveric knees were used for testing in this study. Prior authorization of an ethics committee. A diagnostic arthroscopy, simple radiographs and an MRI were...