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grade cartilage lesions and also a closer examination and non-invasive evolution of these lesions.

Conclusions The present study shows that the maps obtained with low field equipment can be used as a routine technique in the study of non-invasive cartilage lesions, in order to expand the number of diagnostic centres able to identify correctly a cartilage lesion with the tools currently available.

C37–KNEE-ACL I

Clinical, instrumental and biomechanical 10-year follow-up of patients who underwent anterior cruciate ligament reconstruction with the LARS synthetic ligament

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Introduction The use of synthetic material for ACL reconstruction has been proposed since the early 80's. High failure rates have been reported in literature, hence this procedure was not popular in the following decade. The LARS synthetic ligament (ligament advanced reinforcement system) is classified as a second generation ligament designed to eliminate the most common complications such as the risk of rupture, synovitis and lack of fibroblast repopulation. The aim of this study was to evaluate, at a long-term follow-up (more than 10 years), whether the good results obtained at the short term visits, had been maintained.

Materials and methods Thirty-one patients, between 45 and 66 years of age (mean age 56.4 years) were retrospectively enrolled; all had undergone surgery for ACL reconstruction with the LARS synthetic ligament between 2000 and 2004; they have been evaluated clinically, radiographically and using evaluation scores such as Lysholm Score, IKDC, and Tegner Activity Scale. A biomechanical assessment was performed for each patient including gait analysis, stabilometry, isokinetic evaluation of the muscle of the lower limb and KT-1000.

Results The outcome of the follow-up has been encouraging: the average Lysholm score obtained was 96.06, the average IKDC was 90.97. The Tegner Activity Scale decreased from 4.1 (2–9) preoperatively to a current 5.8 (4–10). Good–excellent results were also obtained at clinical examination and at the biomechanical evaluation. Three of the 31 patients had to undergo further surgery for rupture of the synthetic ligament (one of these bilateral). Synovitis or other major complications were not observed.

Discussion The use of a synthetic ligament for ACL reconstruction has a limited indication but it avoids the complications of donor site morbidity and allows faster recovery. The improvement of new materials, in terms of biocompatibility and resistance, as well as the improvement in surgical techniques, has lead to the use of synthetic materials to be proposed again, with satisfactory results.

Conclusions The synthetic ligament can be considered a viable alternative to autologous or heterologous graft for ACL reconstruction as long as the indications are correctly interpreted. With an average follow-up of more than 10 years, we have shown how the results are encouraging with minimal complications, and currently the risk of synovitis is almost nil, as already demonstrated in the literature.

Kinesthetic recovery during the first 12 months after ACL reconstruction in athletes

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Introduction Neurosensorial ACL properties characterize joint stability in both trauma and following functional recovery. Despite of the evolution of surgical techniques no recently studies have been performed in this direction. In particular, the date of return to sport is still fixed at 6 months after the surgery and the proprioceptive recovering mechanisms and events happening during this period haven't been fully explained yet. The purpose of this study was to measure and evaluate the trend of the kinesthetic ability of the subjects who undergone ACL reconstruction during the first 12 months after surgery.

Materials and methods We examined 48 athletes between 18 and 37 years old, with isolated ACL rupture. All of them underwent reconstruction using autologous STG. Twenty athletes without previous knee distortions were considered as control group. Kinesthetic ability evaluations were performed pre-operatively and at 2, 3, 6 and 12 months after surgery by means of the kinesthetic stabilometric platform KAT-2000 (Breg, Ca, USA). The test protocol lies in the execution of two monopodalic and two bipodalic tests.

Results Postoperatively there was a significant improvement in all stabilometric tests. During the first 3 months tests we observed the greatest kinesthetic improvement (70 % of the total recover, $p < 0.01$). At 6 months no statistically significant differences between reconstructed patients and control group were detected. In pre-operative single stance tests no statistically significant differences were highlighted between healthy and injured limb; however in post-operative tests healthy leg has shown an earlier improvement than the injured one despite of having followed a similar trend. We also observed an high pre-operative variability in distribution, which started decreasing at 2 months until the control at 12 months.

Discussion ACL injury results in a functional instability of the knee with abnormal kinesthetic values, and consequently of the motor pattern; this is highlighted by the stabilometric data related to the healthy limb which follow the progress of the contralateral. The data seem to suggest that, re-evaluating the stabilometry of an athlete who undergone ACL reconstruction, we can allow a proper functional recovery planning in order to anticipate a return to sport even before the 6 months reported in the literature.

Conclusions The clinical relevance of this study lies in the demonstration the importance of ACL reconstruction in order to achieve a complete functional recovery and the role of the kinesthetic evaluation in order to establish the correct timing for a proper return to the sport activity.

ACL reconstruction anatomic all-inside technique: surgical technique and results

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Introduction Reconstruction of the anterior cruciate ligament (ACL) has become a common procedure with many techniques described in the literature. Recently technical improvements led to the development of minimally invasive techniques capable to obtain anatomic ACL reconstruction. Aim of this study is to describe the clinical results obtained with an anatomic, single bundle all-inside technique using triplicated or quadruplicated autologous semitendinosus tendon.