



Title: ACL rupture in skeletally immature athletes: long-term results of surgical management with “Over the top” technique

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The rupture of the Anterior Cruciate Ligament (LCA) in skeletally immature athletes is progressively becoming an extremely interesting topic as concerns Sport Traumatology. This is justified by the more frequent participation of young athletes in agonistic sport activities. The most appropriate management is still currently debated. Surgical management is becoming the treatment of choice. The purpose of our study is to analyse and evaluate middle and long-term results of ACL reconstructions performed in skeletally immature patients by the use of the “over the top” technique.

42 patients enrolled. All skeletally immature athletes (age < 16 years) with associated LCA rupture treated surgically using the “Over the top” technique. One single expert surgeon, “Over the top” technique through utilization of gracilis and semitendinous tendon autograft. Long term follow up organized (average length: 70.1 months). IKDC, TEGNER-LYSHOLM, TEGNER ACTIVITY scores used together with isokinetic and arthrometric evaluations with KT1000. Follow up plain radiographs.

42 patients were included. No positivity to Lachman’s test, pivot shift test and anterior draw test clinically recorded. Muscle hypotrophy of operated limb noted in 16 cases out of the 33 surgically treated patients. Muscle hypotrophy was bigger than 1 cm in one case. No lower limb length discrepancy. IKDC mean value: 94.8 (from 100 to 77.7); Tegner-Lysholm mean value: 94.78 (from 100 to 77); 0.4 points of Tegner Activity reduction (maximum loss 3 points, minimum loss -1 point). KT-1000: anterior tibial translation less than 2mm. Dynamometric evaluation: no any significant difference among operated limb and contralateral at final follow up. Follow up xrays: 2 cases with valgus deformity of tibial-femoral axis compared to contralateral unaffected limb. Intact interference femoral screws and absence of any loosening. Early arthritic changes noted: 0. None of surgically treated patients needed second surgery. 22 of operated patients could go back to same sport activity practised before injury, furthermore at a level comparable or even higher than the pre-injury level. Among these 22 patients, average rehabilitation time needed to go back to the full agonistic sport practice: 5.3 months (minimum of 4 months to maximum of 7 months).

The surgical management of ACL rupture with “Over the top” surgical technique and the use of gracilis and semitendinous has shown to be an excellent option strategy in order to repair ruptured ACLs in skeletally immature patients. Our conclusion is applicable to both subjective and objective outcomes, and furthermore at both medium and long term.

Biography

Valerio Pace has completed his MBBs at the age of 27 years from University of Perugia. He worked at FY, SHO and T&O Registrar level in the UK between 2013 and 2017, working at the Royal

National Orthopaedic Hospital from April 2015 to October 2017. He is now a T&O Resident Doctor at the University of Perugia (Italy). He also has a “Honorary Research Contract” at the Royal National Orthopaedic Hospital. He has published 6 papers in reputed journals, presented at several conferences and carrying on plenty of ongoing research projects.

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