SYNTHETIC LIGAMENT FOR ACL RECONSTRUCTION - LITTERATURE REVIEW AND CASE REPORT

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Anterior Cruciate Ligament (ACL) rupture is one of the most common knee injuries. Collateral ligaments are endowed with great intrinsic and well-performing repair potentials, but ACL has poor vascularization and poor healing process as it's surrounded by synovial fluid (Mascarenas 2008). Mainly for these reason the proposed therapeutic plan is surgery. Anterior Cruciate Ligament Reconstruction (ACLR) can be performed either using autologous biological graft as (Gracile and/or Semitendinous tendon, Patella Tendon, Quadriceps Tendon) or heterologous grafts (Allograft, Synthetic Ligaments).
The advantages associated with the use of synthetic material in the reconstruction of the LCA are represented by: immediate recovery of sensitivity, rapid rehabilitation period and absence of autologous graft damage.
In the 1980s several synthetic materials were introduced either for prosthetic replacement of ACL (carbon fibres, Dacron, GoreTexR), or augmentation of biological graft (Leed-Keio and Kennedy augmentation device). Several studies showed better clinical results than biological grafts in short term. However the use of synthetic materials was burdened by a high percentage of long-term complications such as failures mechanical (prosthetic component failure, laxity) or sinovitis due to the material and ultimately early arthrosis.
In recent years, following the development of better materials and more accurate surgical techniques the interest in the use of synthetic grafts for the reconstruction of the ACL in certain groups of patients, such as for example those patients who underwent earlier failure of ACLR with biological grafts.

Biography

Federico Picchetti, physiotherapist graduated at University of Pisa, specialized in Sports Rehabilitation and Injury Prevention. More than five years of experience in Sport Injury, Orthopaedic Rehabilitation and Injury Prevention by movement analysis working with professional and non-professional athlete.