Albert Trillat Young Investigator's Award

Double Bundle versus Single Bundle Anterior Cruciate Reconstruction – Is the Double Bundle Technique Really Better?

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Summary:
This single surgeon series demonstrates that an anatomical single bundle ACL reconstruction performs as well or better than the double bundle technique.

Abstract:
Introduction:
This single surgeon series examines the outcome of double bundle (DBACLR) and single bundle (SBACLR) ACL reconstructions with a minimum 12 month follow up. A particular emphasis on failure rates will be presented.

Methods:
Between August 2006 and August 2010, 311 single bundle and 114 double bundle primary ACL reconstructions were performed. As of August 2010, 211 ACL reconstructions were assessed with a variety of outcome measures. After implementation of the inclusion criteria, 190 ACL reconstructions were analysed (DBACLR = 65, SBACLR = 125). A detailed assessment of a variety of clinical parameters, instrumented knee laxity, IKDC objective and subjective score, SF-36 score and functional hop tests was undertaken. Graft failures were assessed from the entire cohort.

Results:
There were 9 graft failures in both DBACLR and SBACLR groups, representing an 8% and 3% failure rate respectively. .Data analysis showed no significant clinical differences between the two groups for any of the outcome measures. In the DBACLR group 79% of patients scored category A or B for the objective IKDC score compared to 90% of patients in the SBACLR group. Quality of life scores were significantly better for the SBACLR group for the emotion (p=0.003) subscale of the SF-36.

Discussion:
This paper demonstrates that an anatomical single bundle ACL reconstruction can perform at least as well as a double bundle ACL technique. Of concern is the high number of relatively early graft failures in the double bundle group. It is possible that more anatomical techniques using hamstring tendons may not cope with the forces applied through the knee at various angles of flexion.