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Is reconstruction of the anterior cruciate ligament a prerequisite for restoring muscle function?

Kas fonksiyonunu düzeltmek için ön çapraz bağın onarımı şart mıdır?

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Anterior cruciate ligament (ACL) reconstruction is a common procedure after ACL rupture. About half of Swedish patients who rupture the ligament undergo reconstructive surgery, while almost all of patients in the United States do.[1]

There is yet no strong evidence that patients who have surgery are less likely to develop osteoarthritis.[2] A high prevalence of radiographic knee osteoarthritis (78%) was seen in male soccer players 14 years after an ACL disruption.[3] No differences were seen between surgically and conservatively treated players.

The KANON (Knee Anterior cruciate ligament, NON-surgical versus surgical treatment) study is the first randomized, controlled trial to compare physical training with surgical reconstruction.[1] The principal findings of this study were that there were no differences between the surgical and the nonsurgical treatment groups in muscle strength or functional performance between two and five years after injury; this indicates that reconstructive surgery is not a prerequisite for restoring muscle function. Abnormal muscle function, found in approximately one-third or more of the patients, may be a predictor of future knee osteoarthritis.

Kessler et al.[4] studied whether ACL-reconstruction or conservative treatment lead to better long-term results. They observed significantly better knee-stability, but more osteoarthritis (Grade II or higher) after ACL-reconstruction (42% vs. 25%).

Neuman et al.[5] reported a favorable long-term outcome regarding incidence of radiographic knee osteoarthritis, knee function and symptoms, and need for ACL reconstruction. Early activity modification and neuromuscular knee rehabilitation might also have been related to the low prevalence of radiographic knee osteoarthritis. In patients with ACL injury willing to moderate activity level to avoid reinjury, initial treatment without ACL reconstruction should be considered.

For ACL reconstruction, multi-bundle grafts are becoming popular to replicate the structure of the normal ACL and improve the rotatory kinematics of the knee.[6,7] Theoretically, this would reduce the shear forces and minimize osteoarthritis progression; however, this effect has yet to be evaluated in vivo.

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