

## Tendon allograft replacement of ACL deficient knees A five-year follow-up

Wouter Degraeve<sup>(1)</sup>, Franky Steenbrugge<sup>(1)</sup>, Kristof Pierets<sup>(1)</sup>, Nadine Hollevoet<sup>(1)</sup>, Rene Verdonk<sup>(1)</sup>

### Ön çapraz bağdan yoksun dizlerde allograft tendon replasmanı

Ön çapraz bağ (ÖÇB) rekonstrüksiyonunda sentetik greftlerin yüksek komplikasyon oranından dolayı, otörler Kasım 1988'den beri derin dondurulmuş tendon greftleri kullanmaktalar. Kasım 1988-Nisan 1990 tarihleri arasında 30 hastada ÖÇB rekonstrüksiyonu yapıldı. 24 tanesi Lysholm skoruyla değerlendirildi ve ayrıca 17 hasta çapraz bağ değerlendirme formuyla değerlendirildi. Çoğu vakada tibialis anterior ve flexor hallucis longus tendonları kullanıldı. Çalışmamıza göre yaklaşık beş yıl sonra fonksiyonel stabilite ortalama 88.1 bulundu. Bize göre ÖÇB'den yoksun dizlerde allograft tendon replasmanı ile rekonstrüksiyon sonuçları orta uzunluktaki bir dönem için tatmin edicidir.

**Anahtar kelimeler:** ÖÇB lezyonu, tendon allograft

### Tendon allograft replacement of ACL deficient knees (A five year follow-up)

Because of the high complication rate of synthetic grafts for ACL reconstruction, the authors have been using deep frozen tendon allografts since November 1988. 30 patients underwent ACL reconstruction between November 1988 and April 1990. 24 were evaluated with the Lysholm score and 17 were also examined using the cruciate ligament standard evaluation form. In most cases tibialis anterior and flexor hallucis longus tendons are used. According to our study functional stability after approximately 5 years averaged 88.1 as measured by Lysholm score. We conclude that the medium term results of tendon allograft replacement in the ACL deficient knee are satisfactory.

**Keywords:** ACL deficiency, tendon allograft

Because of the high complication rate of synthetic grafts for ACL reconstruction, the authors have been using deep frozen tendon allografts since November 1988. Twenty-two male and eight female patients, who underwent ACL reconstruction between November 2, 1988 and April 14, 1990, were reviewed. The mean age at the time of surgery was 33 years and 8 months. Of the 30 patients, 24 were evaluated with the Lysholm score. Seventeen patients of these were also examined using the cruciate ligament standard evaluation form (Protek, 1992).

The operative procedure consists of the over-the-top placement of the grafts which is fixed with two staples. The allografts we use, are taken from fresh donor cadavers and are stored at -80°C. In most cases tibialis anterior and flexor hallucis longus tendons are used.

### Lysholm score

In six patients (4 female, 2 male) surgery was performed in the acute posttraumatic stage. Their score averaged 89.5. Five patients (1 female, 4 male) were operated on in the subacute stage. Their score averaged 89.6. Eight patients (2 female, 6 male) were operated for chronic instability. They scored an average of 96.4. Five revisions (in 1 female and 4 male patients) were done because of failure of other methods. The Lysholm score of these patients averaged 75.6.

### Cruciate ligament evaluation

The range of motion of the operated knees was between 130° and 140° in 29% and less than 130° in 47% of the patients. There was only a minimal lack of extension and lack of flexion in most of the patients.

Both knees of each patient were evaluated by means of the KT-1000 device, using a 20 N force. The evaluation was always done by the same examiner. The difference was -1 to 2 mm in 65%, 3 to 5 mm in 29% and 6 to 10 mm in 6% of the patients. The finding of a soft endpoint does not correlate with a subjective feeling of instability. The pivot shift test was negative in 13 (76%) patients, showed a glide in 3 (18%) patients and a clunk in 1 (6%) patient.

Valgus laxity is twice as frequent as varus laxity in these posttraumatic knees. More than one third of the patients show some form of irritation around the scar of the arthrotomy. This is, however, not a major complaint. Even in the medium-term follow-up period, there is a beginning of degenerative changes of the knee. Functional testing with the one leg hop test showed a normal knee in 13 patients, an almost normal knee in 3 and a severely abnormal knee in 1 patient.

### Conclusion

Because of the high complication rate of synthetic grafts for ACL reconstruction, the authors have

(1) Dept. of Orthopaedic Surgery, University Hospital, Gent, Belgium

been using deep frozen tendon allografts since 1988. This study shows that after approximately 5 years, functional stability as measured by the Lysholm score, averages 88.1. IKDC ligament standard evaluation reveals a normal to near-normal knee in 88% of the examined patients.

We conclude that the medium-term results of tendon allograft replacement in the ACL deficient knee are satisfactory.

*Correspondence to:*  
*Wouter Degraeve M. D.*  
*Dept. of Orthopaedic Surgery,*  
*University Hospital, Gent, Belgium*