



Available online at
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en



Original article

Return to sports and functional results after revision anterior cruciate ligament reconstruction by fascia lata autograft

G. Mirouse^{a,*}, R. Rousseau^a, L. Casabianca^a, M.A. Etori^a, B. Granger^b,
H. Pascal-Moussellard^a, F. Khiami^a

^a Département de Chirurgie Orthopédique et Traumatologie du Sport, Groupe Hospitalier Pitié-Salpêtrière-Charles Foix, Assistance Publique-Hôpitaux de Paris (APHP), Paris, France

^b Département de Biostatistiques, de Santé Publique et d'Information Médicale, Groupe Hospitalier Pitié-Salpêtrière-Charles Foix, Assistance Publique-Hôpitaux de Paris (APHP), Paris, France

ARTICLE INFO

Article history:

Received 9 January 2016
Accepted 17 June 2016

Keywords:

Anterior cruciate ligament
Ligament reconstruction
Revision surgery
Fascia lata
Return to sports

ABSTRACT

Introduction: The surgical revision rate following anterior cruciate ligament (ACL) surgery is 3% at 2 years and 4% at 5 years. Revision ACL surgery raises the question of the type of graft to be used. The present study assessed return to sports and functional results after revision ACL reconstruction by fascia lata graft. The hypothesis was that fascia lata provides a reliable graft in revision ACL surgery.

Material and methods: A single-center retrospective continuous study included 30 sports players with a mean age of 26.8 ± 8 years undergoing surgical revision for iterative ACL tear between 2004 and 2013. Multi-ligament lesions were excluded. Type and level of sports activity were assessed preoperatively, after primary surgery and at end of follow-up. Clinical assessment used subjective IKDC, Lysholm and KOOS scores.

Results: At a mean 4.6 ± 1.6 years' follow-up, all patients had resumed sport activity, but only 12 with the same sport at the same level. Median subjective IKDC score increased from 57 [54.3; 58.5] preoperatively to 82 [68.3; 90] at last follow-up, and Lysholm score from 46 [42.3; 51] to 90.5 [80.8; 96.8]; KOOS score at last follow-up was 94.7 [83; 100].

Conclusion: Functional results in revision ACL reconstruction by fascia lata graft were satisfactory, with similar return-to-sports rates as with other techniques. Fascia lata provides a reliable graft in revision ACL surgery.

Level of evidence: IV, retrospective study.

© 2016 Elsevier Masson SAS. All rights reserved.

1. Introduction

Anterior cruciate ligament (ACL) tear is frequent in sports players. First-line treatment most often uses hamstring or patellar tendon graft, with good functional results but an iterative tear rate of 3% at 2 years and 4% at 5 years [1,2]. Complications of reconstruction comprise recurrent instability, postoperative stiffness and pain that may prevent resumption of sport [3,4]. Return-to-sports rates following primary reconstruction range from 50% to 70% [5], and are even lower after revision reconstruction [6–14]. Revision ACL surgery may raise several problems, which should be analyzed preoperatively to avoid reproducing the causes of failure: management of existing material, bone-tunnels, cartilage and meniscal capital.

There is no consensus on type of graft or surgical technique: hamstring, patella or quadriceps tendon or allograft may all be used [3–11]. Fascia lata autograft is an old technique, but which has been improved [15]; there have been several studies of its use in primary surgery but, to our knowledge, none in revision surgery.

The present study assessed return to sports and functional results after revision ACL reconstruction by fascia lata autograft. The hypothesis was that fascia lata provides a reliable graft in revision ACL surgery.

2. Material and methods

A single-center retrospective continuous series included all sport-playing patients aged 18–50 years operated on for isolated revision ACL reconstruction by fascia lata graft between 2004 and 2013.

* Corresponding author.
E-mail address: gmirouse@gmail.com (G. Mirouse).

Table 1
Clinical and pre-injury sports characteristics.

Patient	Age	Gender	Graft	Reasons for revision	Sport	Pre-injury level
1	20	M	ST-G	Instability	Soccer	Competition
2	22	M	ST-G	Repeat trauma	Soccer	Competition
3	27	M	ST-G	Repeat trauma	Soccer	Competition
4	17	M	ST-G	Repeat trauma	Soccer	Professional
5	17	M	ST-G + lat tenodesis	Instability	Handball	Professional
6	27	M	Patella tendon	Pain	Soccer	Competition
7	21	M	ST-G	Pain	Soccer	Competition
8	18	F	ST-G	Instability	Handball	Competition
9	28	F	Patella tendon	Repeat trauma	Basketball	Competition
10	20	M	ST-G	Repeat trauma	Handball	Competition
11	31	F	ST-G	Repeat trauma	Soccer	Regular recreational
12	17	F	ST-G	Repeat trauma	Soccer	Competition
13	36	M	ST-G	Pain	Kite-surfing	Competition
14	25	F	Patella tendon	Instability	Volleyball	Competition
15	27	F	Patella tendon	Instability	Skiing	Competition
16	33	F	Patella tendon	Repeat trauma	Handball	Competition
17	34	F	ST-G	Repeat trauma	Tennis	Professional
18	35	F	Synthetic ligament cv	Repeat trauma	Tennis	Occasional recreational
19	19	M	ST-G	Repeat trauma	Volley	Professional
20	29	F	Patella tendon	Repeat trauma	Fencing	Regular recreational
21	36	F	ST-G	Repeat trauma	Fencing	Competition
22	29	F	ST-G	Instability	Skiing	Regular recreational
23	45	F	ST-G	Instability	Handball	Regular recreational
24	20	F	ST-G	Repeat trauma	Handball	Competition
25	18	F	ST-G + Lat Tenodesis	Repeat trauma	Rugby	Competition
26	24	F	Patella tendon	Pain	Running	Occasional recreational
27	30	F	ST-G	Repeat trauma	Skiing	Regular recreational
28	25	F	ST-G	Repeat trauma	Running	Occasional recreational
29	46	M	ST-G	Instability	Running	Occasional recreational
30	18	F	ST-G+ Lat Tenodesis	Instability	Running	Competition

ST-G: semitendinosus-gracilis.

Exclusion criteria comprised: multi-ligament tears, non-sports-players, contralateral ACL tear or surgery, and septic complications. All patients were operated on by a single senior surgeon, using the modified MacIntosh fascia lata technique [15]. Assessment was performed independently, on subjective IKDC and Lysholm scores ahead of primary ACL surgery and at last follow-up, and on KOOS score at last follow-up. The ACL-RSI scale, a psychological scale correlating with Return to Sport after Injury in ACL reconstruction, was administered at last follow-up [16].

Assessment included type of sport and level, before injury, after primary surgery and at last follow-up.

Sports were classified as pivot-contact, pivot, and line. Levels were classified as professional, competition, regular recreational (same sport more than twice weekly) and occasional recreational (less than twice weekly).

All patients were seen at last follow-up and filled out a questionnaire assessing sports activity and functional scores.

The series comprised 30 patients, at a mean 4.6 ± 1.6 years' follow-up; there was no loss to follow-up. Clinical and sport-related characteristics are shown in Table 1.

2.1. Statistical analysis

Quantitative variables were expressed as median [1st quartile; 3rd quartile]. Qualitative variables were expressed in absolute values.

The Wilcoxon test for matched data analyzed significant change in IKDC and Lysholm scores.

The significance threshold was set at 0.05. All analyses were performed on R software, version 3.1.3.

3. Results

At last follow-up, all patients had returned to sport after revision surgery: 12 to the same sport at the same level, 15 to the same sport

at a lower level, and 3 to a different sport. Fig. 1 presents return to sport according to primary versus revision surgery.

Median subjective IKDC rose from 57 [54.3; 58.5] preoperatively to 83 [68.3; 90] at last follow-up (Δ : 26 [8.3; 32.5]; $P < 0.0001$) and Lysholm score from 46 [42.3; 51] to 90.5 [80.8; 96.8] (Δ : 41 [36.3; 48.8]; $P < 0.0001$). At last follow-up, global KOOS score was 94.7 [83; 100]; 97.2 [90.9; 100] for stiffness, 98.6 [95.8; 100] for pain, 80 [62.5; 93.8] for daily activity, and 75 [43.4; 93.8] for sports activity. Mean ACL-RSI score was 59 ± 24 .

There were 4 postoperative complications: 3 harvesting site hematomas not requiring surgical drainage, and 1 small asymptomatic muscle hernia. At last follow-up, there were no cases of surgical revision for meniscus or cartilage lesion.

4. Discussion

All patients returned to sport. Twelve returned to the same sport, at pre-injury level, after revision surgery; this is one of the objectives of ACL reconstruction. Functional scores (subjective IKDC and Lysholm) improved systematically.

Autograft biomechanics in ACL reconstruction should approximate native ACL, while showing low morbidity [17]. Fascia lata is biomechanically suitable. According to Chan et al. [18], initial traction resistance (3266 N) and rigidity are equal to or greater than those of several other ACL graft candidate tissues, including patella tendon. Meta-analyses of iterative ACL surgery report that grafts are autografts in 85% of cases (50% patella, 29% hamstring and 6% quadriceps tendon), with allograft in the remaining 15% [19]. Our own preference is for fascia lata, associating mixed intra-articular reconstruction and above all lateral tenodesis, very often used in revision ACL surgery to improve control of knee rotation [20]. Performing an out-in femoral tunnel facilitates the creation of the new tunnel, controls the intra- and extra-articular exit point, and reduces the risk of posterior cortical collapse.

Download English Version:

<https://daneshyari.com/en/article/5711241>

Download Persian Version:

<https://daneshyari.com/article/5711241>

[Daneshyari.com](https://daneshyari.com)