

# Selections From Recent French Language Journals

Philippe Beaufils,\* MD, and Jacques Menetrey,<sup>†</sup> MD

From \**Hôpital Andre Mignot, Le Chesnay, France*, and <sup>†</sup>*University Hospital of Geneva, Geneva, Switzerland*

## RETURN TO SPORT AFTER HIP RESURFACING OR TOTAL HIP ARTHROPLASTY: A PROSPECTIVE RANDOMIZED STUDY

M. Lavigne,\* V. Masse,\* J Girard,<sup>†</sup>

AG Roy,\* P. A. Vendittoli\*

From \**Orthopaedic Department, Hôpital Maisonneuve-Rosemont, Montreal, Quebec, Canada*, and <sup>†</sup>*Orthopaedic Department, Hôpital Roger Salengro, Lille University, Lille, France*

**Background:** Since wear component of prosthetic metal-polyethylene couple is directly related to the patient activity level, it is logical to advise operated patients against participation in long and strenuous physical activities. The purpose of this study was to compare the type, level, and frequency of sports activities performed after resurfacing hip arthroplasty (RH) or total hip arthroplasty (THA) using a metal-on-metal bearing system for both types of implants.

**Hypothesis:** Level of sports activities is greater in patients with resurfacing hip arthroplasty.

**Study Design:** Prospective randomized study.

**Methods:** Two hundred five hips were enrolled in the study and 152 unilateral hip arthroplasties (71 THA and 81 RH) were studied. Randomization was applied using the Statistical Package for Social Sciences 10.04 software with closed envelopes. The study was approved by the Canadian Ethics Committee. A posterior approach was used in all cases.

Both groups were comparable in terms of age (RH: 48.4 [range, 23-63] years; THA: 50.0 [22-64] years;  $P = .306$ ), gender, body mass index (RH: 27.0 [17.6-44.9]; THA: 28.7 [17.4-42.5];  $P = .064$ ), and preoperative activity score (RH: 5.8; THA: 5.1;  $P = .11$ ). At the review, patients completed a self-administered questionnaire to determine the type, level, and frequency of pre- and postoperative sports activities. For the evaluation, 3 clinical scores were used: an overall activity score, the UCLA (University of California, Los Angeles) score, and the WOMAC (Western Ontario and McMaster Universities) score. Patient satisfaction, return to sports

activities (using a visual analog scale [VAS]), and factors limiting the activity were recorded.

**Results:** The mean overall activity score immediately before surgery was not statistically different between the two groups ( $P = .111$ ). One year after surgery, the activity score was 17.9 in the RH group and 12.4 in the THA group ( $P = .001$ ). At last follow-up (mean, 27.4 months; minimum, 12 months), the mean WOMAC score was 8.1 (range, 0-73; standard deviation [SD], 13.1) in the RH group and 9.8 (range, 0-41; SD, 10.9) in the THA group ( $P = .409$ ). The mean UCLA score was 7.17 (range, 2-10; SD, 1.90) in the RH group and 6.75 (range, 2-10; SD, 1.71) in the THA group ( $P = .174$ ). The mean satisfaction score, assessed with the VAS and looking specifically at the return to sports activities, was 7.78 in the RH group and 7.43 in the THA group ( $P = .313$ ).

**Conclusion:** In this study, it appears that the level of post-operative sports activities is greater in the RH group than in the THA group, although this difference was smaller than expected. The excellent stability that RH (big head effect) offers could be one of the major factors that favors a higher activity level when compared with conventional THA. By limiting the risk of dislocation and increasing the suction effect between components, RH permits more extreme movement and, therefore, a broader spectrum of sport activities. However, the long-term effect of intense sports activities on fixation of osteointegrated implants (cups) and cemented components (femoral stem) is still a concern.

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## FRACTURES OF THE LATERAL PROCESS OF THE TALUS: A RETROSPECTIVE STUDY OF 44 CASES

E. Sariali, J. F. Lelièvre, Y. Catonné

From *Orthopaedic and Traumatology Department, Hôpital Pitié Salpêtrière, Paris, France*

**Background:** Fractures of the lateral process of the talus are often misdiagnosed. Most often, studies in the literature report small groups of patients. Nowadays, we know that results in cases of delayed diagnosis are often poor.

**Hypothesis:** The aim of the study was to analyze the specificity and outcome of these fractures in a large group of patients.

**Study Design:** Retrospective cohort study.

**Methods:** Forty-four fractures in 43 patients were studied at an average follow-up of 17 months. Patients were evaluated with the Kitaoka score and all radiographs were analyzed with the use of the Hawkins classification. Diagnosis at the time of the injury was noted in 14 cases and a delayed diagnosis was observed in 30 cases. In this group, the mean time from injury to diagnosis was 46 months. In 19 cases, the fracture had occurred during sports. The most frequent mechanism of injury was the association of a dorsal flexion and pronation. In 44% of cases, there were associated lesions.

**Results:** In the delayed diagnosis group, we found 14 cases of nonunion associated with subtalar osteoarthritis, 2 cases of isolated nonunion, 7 cases of malunion, and 2 cases of isolated subtalar osteoarthritis. The treatment was an injection in 9 cases. A surgical treatment was performed in 21 cases: 14 excisions of fragments, 5 subtalar arthrodesis, and 2 osteotomies. In the delayed diagnosis group, at the last follow-up (mean 12 months), excellent results were noted in 15 cases (50%), good in 7 cases (23%), fair in 7 cases (23%), and poor in 1 case (4%). In the immediate diagnosis group, 12 patients were treated with a cast and 2 had an open reduction and internal fixation (ORIF). Among the patients treated with a cast, 5 required a surgical treatment due to a nonunion associated with subtalar arthritis (3 cases), a nonunion alone (1 case), and subtalar arthritis alone (1 case). Results were excellent in 8 cases (58%), good in 4 cases (28%), and fair in 2 cases (14%). Immediate diagnosis and ORIF were correlated with a better outcome at the last follow-up (Kitaoka score = 92.5).

**Conclusion:** Fracture of the lateral process of the talus is frequent and occurs in young and active persons. The natural history of this lesion can be complicated by the development of a symptomatic nonunion and subtalar osteoarthritis. Early diagnosis is critical. Surgical treatment is always recommended in cases of displaced fracture.

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#### ARTHROSCOPIC TIGHTENING OF THE ANTERIOR CRUCIATE LIGAMENT: DESCRIPTION OF THE TECHNIQUE AND PRELIMINARY RESULTS

O. Charrois,\* E. Cheyrou,<sup>†</sup> J. Remi,<sup>†</sup> L. Panarella,<sup>†</sup> F. Jouve,<sup>†</sup> P. Beaufils<sup>†</sup>

From \*Clinique Geoffroy Saint Hilaire, Paris, France, and <sup>†</sup>Orthopaedic Department, Centre Hospitalier Versailles, Versailles, France

**Background:** Elongation of the graft after an anterior cruciate ligament (ACL) reconstruction is a frequent condition that leads to residual laxity. Classically, a revision ACL reconstruction is proposed but we know that results of those are inferior to primary ACL reconstruction. When the graft is torn or tunnels are not well-positioned, revision is indicated. However, when the graft is well-positioned, a revision requires the harvesting of a new graft and its fixation can be problematic. The authors developed a technique that

consists of tightening the ACL graft or the original ACL. Indeed, the ACL tightening technique can also be proposed in cases of native ACL elongation.

**Hypothesis:** Anterior cruciate ligament tightening can be successfully performed in specific indications: after fracture-avulsion of tibial spines or after stretching of a well-positioned ACL graft.

**Study Design:** Case series.

**Methods:** Six patients were enrolled and underwent the tightening technique. Four had prior ligament reconstruction with a bone-patellar tendon-bone graft and 2 had previous tibial spine fractures. Residual laxity persisted in all cases. On magnetic resonance imaging, the original ligament or graft was continuous and tunnels or ACL insertions were well-positioned. The procedure consisted of using a trephine of 11 to 12 mm in diameter to bore the tibial bone around the graft or ligament "foot." Then, with transosseous sutures passed under arthroscopic control, the ligament was tightened up at 30° of flexion and fixed with a tibial bioabsorbable interference screw. The rehabilitation program consisted of immediate full weightbearing, range of motion allowed between 0° and 90° of flexion, and closed-chain exercises started immediately after surgery.

**Results:** All procedures were successfully performed. No complication was noted. There was no more evidence of functional instability after the arthroscopic tightening procedure. Using preoperative and postoperative (6-month follow-up) Telos comparative measurements, mean preoperative and postoperative differential anterior drawer values were 9.2 (range, 8.3-10) mm and 3.9 (2.4-6) mm, respectively.

**Conclusion:** In cases of continuous and well-positioned, but loose, reconstructed ACL or elongated native ACL, the arthroscopic tightening technique spares the need for primary ligament reconstruction or revision. In our experience, this technique shows no morbidity and preliminary clinical results are encouraging.

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#### MINI-INVASIVE DOUBLE-SKIN INCISION TECHNIQUE FOR PATELLAR TENDON HARVESTING IN ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

O. Drain, P. Beaufils, C. Thevenin-Lemoine, C. Boggione, M. Katabi, O. Charrois, P. Boisrenoult  
From Orthopaedic Department, Centre Hospitalier Versailles, Versailles, France

**Background:** Injury to the infrapatellar branches of the medial saphenous nerve may be at the origin of sensory disorders and anterior knee pain reported after anterior cruciate ligament reconstruction with bone-patellar tendon-bone (BPTB). In a prior anatomic work on patellar tendon harvesting, we have demonstrated the pertinence of using a double-skin incision to spare nerve branches. The objective of this study

was to compare the morbidity of the double-skin incision technique versus the conventional BPTB single-skin incision technique.

**Hypothesis:** A double-skin incision technique will result in less anterior knee pain, sensory disorders, and kneeling problems.

**Study Design:** Case control study.

**Methods:** The patellar tendon was harvested via two 2-cm vertical incisions, 1 on the apex of the patella and the other along the protrusion of the anterior tibial tubercle. After the patellar bone plug was harvested, separation of the patellar tendon fibers was performed subcutaneously toward the anterior tibial tubercle. This allowed for the extraction of the graft through the tibial approach, thus preserving the peritendon. Routine arthroscopic anterolateral and anteromedial portals were used for the ligament reconstruction. At 6 months' follow-up, in 42 knees (double-skin incision harvesting technique) and in 41 knees (conventional harvesting technique), the authors studied the incidence of anterior knee pain and kneeling problems and measured the area of sensory disorders at the anterior aspect of the knee using a specific frame.

**Results:** In the double-skin incision group, no patient required a conversion to a single-skin incision technique. No complication such as tear of the patellar tendon or fracture of bone plugs was noted. Mean extra harvesting time was 17 minutes with this technique. The double-skin incision technique resulted in a significant decrease in the area of hypoesthesia ( $7.4 \text{ cm}^2$  versus  $17.4 \text{ cm}^2$ ;  $P < .0001$ ) when compared with the conventional technique. In the double-skin incision group, there were 24 knees without sensory disorders, 2 knees with anterior knee pain, and 20 knees had a negative kneeling test. In the single-skin incision group, there were 8 knees without sensory disorders ( $P < .004$ ), 10 knees with anterior knee pain, and only 6 knees had a negative kneeling test. There was a strong relationship between the area of sensory disorders and a positive kneeling test (analysis of variance test,  $F = 8.77$ ;  $P < .001$ ).

**Conclusion:** The double-skin incision technique improves the outcomes of BPTB ligament reconstruction in terms of anterior knee pain, sensory disorders (severity and area), and kneeling capacities. One disadvantage of the technique is the increase in operative time. Longer follow-up is required to verify if this initial benefit persists.

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#### EFFECT OF THE WEAVER PROCEDURE OR PARTIAL SUBSCAPULARIS TENDON SECTION IN LATARJET PROCEDURES: A COMPARATIVE STUDY

H. Pichon, V. Startun, R. Barthélémy, D. Saragaglia  
*From Orthopaedics and Sports Traumatology Department, University of Grenoble, Grenoble, France*

**Background:** The Latarjet procedure (transfer of the coracoid process) is frequently used for anterior stabilization of

the shoulder joint. This procedure usually requires a complete section of the subscapularis tendon and it has been shown that this may lead to only fair functional results. The Weaver technique consists of a partial section of the lower third of the subscapularis tendon rather than a complete section. So far, this technique has not been routinely used in Latarjet procedures.

**Hypothesis:** The Weaver procedure is feasible in a Latarjet stabilization and results in less damage to subscapularis tendon, yielding better functional outcomes.

**Study Design:** Retrospective cohort study.

**Methods:** Two homogeneous groups of patients regarding age, gender, type of instability, and sports activities were compared. Twenty-nine patients underwent a complete vertical section (group 1 operated between 1990 and 1991) and 30 a Weaver partial section of the subscapularis tendon (group 2 operated between 1996 and 1998). All patients were reviewed by an independent observer at a mean follow-up of 4 years (group 1: 48.6 months [range, 45-60]; group 2: 50.1 months [34-66]). Clinical evaluation included measurement of the strength in internal rotation, maximal hand-back distance with the Gerber lift-off test, and Constant and Duplay scores. Radiographs were coupled with computed tomography scan evaluation in 46 patients (23 in each group). Thickness of the subscapularis muscle was measured and compared with the nonoperated side. Staging of muscle fatty infiltration was performed according to Bernageau.

**Results:** No recurrent dislocation was noted in either group. There were 6 cases of nonunion in group 1 and 7 in group 2. The Gerber lift-off test was positive in 5 patients in group 1 and none in group 2 ( $P = .01$ ). Loss of strength in internal rotation was 48.4% and 17.9% in groups 1 and 2, respectively ( $P < .0006$ ) when the operated side was compared with the healthy side. The location of the coracoid process on the scapula was the same in both groups. In group 1, stages of subscapularis muscle fatty infiltration were: stage 0 ( $n = 3$ ), stage 1 ( $n = 11$ ), stage 2 ( $n = 3$ ), and stage 3 and 4 ( $n = 6$ ). In group 2, these stages were: stage 0 ( $n = 21$ ), stage 1 ( $n = 1$ ), stage 2 ( $n = 2$ ), and 0 stage 3 and 4 ( $P < .0001$ ). Loss of muscle thickness was 52% in group 1 and 1% in group 2. In this last group, there was no complete tear of the subscapularis tendon.

**Conclusion:** Recent studies have demonstrated the importance of subscapularis muscle trophicity to obtain good mid- and long-term clinical outcomes. The choice of the incision technique for the subscapularis muscle tendon remains debatable. In this retrospective study, the authors have demonstrated that a complete section of the subscapularis tendon leads to subsequent tears and fatty degeneration. They have also demonstrated that Weaver section in a Latarjet procedure is feasible and enables a placement of the bone block that is similar to the one with a complete section of the tendon. The Weaver technique allows for a better function of the subscapularis muscle, and thus a better postoperative function.

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