



Available online at
ScienceDirect
www.sciencedirect.com

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



Original article

Outcomes of cup revision for ilio-psoas impingement after total hip arthroplasty: Retrospective study of 46 patients

C. Batailler^{a,*}, N. Bonin^b, M. Wettstein^c, A. Nogier^d,
S. Martres^e, E. Ollier^f, O. May^g, S. Lustig^a, French-Language Arthroscopy Society (SFA)^h

^a Centre Albert-Trillat, groupement hospitalier Nord, 103, grande rue de la Croix-Rousse, 69004 Lyon, France

^b Lyon Ortho Clinic, 29B, avenue des Sources, 69009 Lyon, France

^c ITOLS, clinique de Genolier, route du Muids 3, 1272 Genolier, Switzerland

^d Nollet Institute, 23, rue Brochant, 75017 Paris, France

^e Orthopaedic Department, Hôpital Renée-Sabran, boulevard Edouard-Herriot, 83406 Hyères, France

^f U1059, Inserm, dysfonction vasculaire et hémostase, 42023 Saint-Etienne, France

^g Centre de chirurgie de la hanche, Médipôle Garonne, 45, rue de Gironis, 31100 Toulouse, France

^h Société francophone d'arthroscopie, 15, rue Ampère, 92500 Rueil Malmaison, France

ARTICLE INFO

Article history:

Received 5 March 2017

Accepted 31 July 2017

Keywords:

Total hip arthroplasty
Ilio-psoas impingement
Acetabular revision
Complication

ABSTRACT

Background: Impingement of the ilio-psoas tendon on the acetabular component is a cause of pain after total hip arthroplasty (THA). Studies of cup revision for ilio-psoas impingement (IPI) are scarce and limited in size. We therefore conducted a large multicentre retrospective study with the following objectives: to assess the effectiveness of cup replacement in resolving the impingement syndrome, to determine the frequency and nature of complications after cup revision for IPI, and to identify pre-operative factors associated with good outcomes of cup revision for IPI.

Hypothesis: Cup revision is effective in resolving the pain due to IPI in selected patients.

Methods: This retrospective multicentre study included 46 patients who underwent cup revision because of IPI. Before the revision, 38 (83%) patients had prominence of the anterior cup rim (mean, 9.9 ± 4.5 mm (range, 2–22 mm) by radiography and 35 (76%) had cup malposition (anteversion $< 10^\circ$ and/or inclination $> 50^\circ$). Mean follow-up was 21 months (range, 6 months to 6 years) and no patient was lost to follow-up. Outcomes at last follow-up were assessed based on the Oxford Hip Score (OHS), patient satisfaction index, complications, and revisions.

Results: At last follow-up, 39 (85%) patients were satisfied with the revision procedure, a significant improvement versus baseline was noted in the OHS (mean, 43 ± 6 ; range, 25–48; $P < 0.001$), and 41 patients were free of pain during hip flexion ($P < 0.001$ versus baseline). Complications occurred in 3 (6.5%) patients, but only one complication was severe (deep infection). Recurrent groin pain was reported by 4 (8.7%) patients at last follow-up. None of the factors studied predicted the outcome of revision surgery.

Discussion: Cup revision for IPI after THA is effective in relieving the groin pain in 80% of patients with anterior cup rim prominence and/or cup malposition. However, complications can occur. Tenotomy may be preferable when the diagnosis is in doubt and/or cup position is acceptable.

Level of evidence: IV, retrospective observational study.

Published by Elsevier Masson SAS.

1. Introduction

Many conditions can cause persistent pain after total hip arthroplasty (THA). Among them, impingement of the ilio-psoas tendon on the cup can result in groin pain. Ilio-psoas impingement (IPI)

has been reported in 4.3% of patients with pain after THA [1]. One of the main sources of IPI is prominence of the anterior cup rim at the ilio-psoas notch. Groin pain during active hip flexion and upon palpation of the ilio-psoas tendon at the groin is highly suggestive of IPI [2–4]. The imaging studies support the diagnosis by showing ilio-psoas tendon lesions, impingement, and/or bursitis [5]. Management strategies range from local corticosteroid injections combined with physical therapy [1] to cup revision [3,6–10].

* Corresponding author.

E-mail address: cecile-batailler@hotmail.fr (C. Batailler).

Published data on IPI are limited to small studies, none of which is randomised or prospective. Local corticosteroid injections seem insufficient to provide long-lasting pain relief [1,6,11–13]. Endoscopic tenotomy is a minimally invasive procedure that has provided promising results [4,14,15], but has also been described as significantly diminishing hip flexion strength and carrying a risk of recurrent pain. Cup revision is a major surgical procedure with a non-negligible complication rate and may not be appropriate in all patients [6,16].

Studies of cup revision for IPI are few in number and small in size. We therefore conducted a large multicentre retrospective study with the following objectives:

- to assess the effectiveness of cup replacement in resolving the impingement syndrome;
- to determine the frequency and nature of complications after cup revision for IPI;
- to identify pre-operative factors associated with good outcomes of cup revision for IPI.

Our working hypothesis was that cup revision was effective in resolving the pain due to IPI in selected patients.

2. Material and methods

2.1. Patients

A retrospective multicentre study of treatment outcomes was conducted. Inclusion criteria were IPI against the cup after THA managed by isolated cup revision between January 2011 and March 2016 in any of the four participating centres. The diagnosis of IPI relied on the presence of groin pain exacerbated by hip flexion against resistance, without computed tomography (CT) evidence of cup loosening; it was supported in some patients by the imaging study findings. Neither pain at night nor pain radiating to other sites was an exclusion criterion. The 10 surgeons in the four study centres performed cup revision for IPI in patients meeting any of the following criteria: greater than 10 mm anterior cup prominence on the Lequesne oblique standing (false profile) radiograph or axial CT slice where cup prominence was most marked; greater than 5 mm anterior cup prominence on the same imaging studies combined with cup retroversion or greater than 55° cup inclination; or excessive cup anteversion with tenting of the ilio-psoas tendon over the femoral head in a patient with a fixed-bearing prosthesis and femoral head diameter > 36 mm, bursitis, and slice-imaging evidence of IPI against the femoral head. Patients in whom IPI was not found during surgery and those with other causes of groin pain were excluded.

We included 46 patients. Table 1 reports their demographic features and pre-operative symptoms and Table 2 the type of implant in place at the time of the revision. These data were collected retrospectively. An antero-posterior radiograph of the pelvis, a Lequesne radiograph of the involved hip, and CT of the pelvis were obtained routinely (Table 3). Cup rim prominence was demonstrated by CT in 45/46 (98%) patients and on the Lequesne radiograph in 38/46 (83%) patients. All patients had anterior rim prominence, cup malposition, or both (Fig. 1, Table 3). Cup inclination was 45° to 50° in 15 patients and greater than 50° in 15 patients. Additional investigations were obtained when the diagnosis was in doubt. Thus, magnetic resonance imaging (MRI) was performed in 8/46 (17%) patients and showed psoas bursitis in 3. In one patient, MRI showed 35° of anteversion, IPI against a 40 mm femoral head, and psoas bursitis; cup inclination was 50°. The cup revision procedure in this patient involved implanting a dual-mobility cup in a more medial position, with less anteversion; these changes resolved the

Table 1
Demographic features and pre-operative symptoms in the 46 study patients.

	n = 46
Age, years, mean ± SD (range)	66 ± 12 (44–85)
Males/females, n (%)	13 (28%)/33 (72%)
BMI, kg/m ² , mean ± SD (range)	27.5 ± 4.8 (18–45)
Pre-operative OHS/48, mean ± SD (range)	19 ± 7 (7–35)
Symptom-free interval after THA, n (%)	8 (17.4%)
Time from THA to revision surgery, months, mean ± SD (range)	34 (5 months–17 years)
Location of pain, n (%)	
Groin	46 (100%)
Anterior thigh	11 (24%)
Adductors	2 (4%)
Other (buttock, low back)	12 (26%)
Circumstances of pain occurrence, n (%)	
Climbing up stairs	46 (100%)
Getting out of a car	45 (98%)
Passive mobilisation	24 (52%)
At night	21 (46%)
Sneezing	18 (39%)
Groin pain upon hip extension/flexion, n (%)	45 (98%)/44 (96%)
Hip flexor strength (MRC score [17]), n (%)	
5	5 (11%)
4	24 (52%)
3	11 (24%)
2	6 (13%)
Loss of strength ^a	–1.4

BMI: body mass index; OHS: Oxford Hip Score; THA: total hip arthroplasty; MRC: Medical Research Council score.

^a Difference in MRC score points between the normal side and the operated side.

Table 2
Characteristics of the implants in place at cup revision.

Implant in place	n (%)
Primary THA prosthesis	41/46 (89%)
Pre-operative acetabular dysplasia	7/46 (15%)
Fixation of the cup	
Press-fit	40/46 (87%)
Cemented	4/46 (8.7%)
Reinforcement ring	2/46 (4.3%)
Fixed-bearing or dual-mobility	
Fixed bearing	29/46 (63%)
Dual mobility	17/46 (37%)
Bearing couple (fixed-bearing)	
Metal/polyethylene	6/29 (21%)
Ceramic/polyethylene	2/29 (7%)
Ceramic/ceramic	18/29 (62%)
Metal/metal	3/29 (10%)
Head diameter (mm) (fixed-bearing)	
22	1/29 (3%)
28	9/29 (31%)
32	8/29 (28%)
36	9/29 (31%)
> 40	2/29 (7%)

THA: total hip arthroplasty.

IPI, obviating the need for ilio-psoas tenotomy. Serum C-reactive protein was assayed in 24/46 (54%) patients and was elevated in a single patient (50 mg/L), who had an inflammatory joint disease. A local injection of corticosteroid or anaesthetic was performed as a diagnostic test in 17/46 (37%) patients and provided transient pain relief in 12/17 (70%).

2.2. Method

Table 4 reports the characteristics of the cup revision procedures. Ilio-psoas tenotomy was performed in 11 patients with tendon lesions or prominence of the newly implanted cup (e.g., due to acetabular dysplasia). IPI was noted during surgery in 45 patients and recorded in the surgical report.

Download English Version:

<https://daneshyari.com/en/article/8802360>

Download Persian Version:

<https://daneshyari.com/article/8802360>

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