

# Endoscopic ileopsoas release after total hip replacement - Case report of five cases

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Inguinal or groin pain after total hip arthroplasty (THA) and total hip resurfacing (THR) procedures has become an increasing clinical problem (1,2). Reasons for groin pain after THR and THA are various. Infection is maybe the most usual reason and anyway the first diagnose to be excluded as well as fracture. Other reasons for groin pain are loose components, heterotopic ossification, neurologic and vascular pathology, recurrent ileopsoas hematomas (3), intra-abdominal pathology and referred pain from the lumbar spine (4). Groin pain seems to be more common after large metal-on-metal bearing surfaces THA and THR (15-18%) (1) than after conventional metal on polyethylene bearing THA (0.37-4.3%) (1,5,6). One reason for groin pain is ileopsoas tendonitis. Incidence of tendonitis in literature has been from 0.4% to 4.3% (5,7). Potential causes for ileopsoas tendon irritation are on acetabular side (8-11) prominent anterior rim of acetabular component due to decreased anteversion, over sized component, inadequate medialisation of the cup, protruding fixation screws of acetabular component or cement over acetabular rim. On femoral side osteophytes on femoral neck or protruding cement after THR. Also large head size is associated to ileopsoas irritation (1).

Several open techniques have been described for ileopsoas lengthening and release (12-15). However high complication rates up to 40% have also been reported (16).

Endoscopic ileopsoas release is a well documented and safe procedure with low complication rate. In internal snapping hip without prosthesis results have been comparable to open surgery (16-19).

Results of conservative treatment have been controversial in the literature. Nuley et al.(20) reported good results of selective fluoroscopic guided corticosteroid and anesthetic injections of the ileopsoas bursa. Only six patients out of 27 needed additional surgical procedure. Dora et al.(21) reported results of 30 hips with ileopsoas tendonitis after THR. They divided patients in to conservative, ileopsoas tenotomy and acetabular revision groups. In their study conservative treatment failed in all eight hips. In tenotomy and de-

bridement group three had symptoms after operation. Acetabular revision group had the highest rate of complications, also severe ones leading to exarticulation.

## *Patients and methods*

Between 2009 and 2010 we performed endoscopic ileopsoas release for five patients. Main symptom for all patients was inguinal pain. Duration of symptoms was from 9 months to 4 years.

Joint fluid aspiration was done for all patients to exclude infection. Local anesthetic (Levobupivacain 5 mg/ml 10ml) was injected in fluoroscopy or in ultrasound guidance to confirm ileopsoas tendinitis. Level of pain relief was recorded. All patients had inguinal pain in lowering straight raised leg. Also FABER-test (flexion abduction external rotation) was positive in all patients. Conservative treatment included physiother-

apist guided exercises and pain medication with non-steroidal anti-inflammatory drug (NSAID). There was no signs of component loosening in x-rays.

For all patients ileopsoas tendon was released at the level of lesser trochanter (17,19). Surgery for all patients was done by one surgeon (MS). Patients were positioned in lateral decubitus position with hip distraction device (Smith and Nephew). Distraction was used only with arthroscopies for hip resurfacing arthroplasties. Otherwise arthroscopy for articulation was done without distraction.

Instrumentation was standard hip arthroscopy instrumentation. At the beginning of the procedure, joint was evaluated and debrided. In resurfacing cases also anterior bony bumpers were removed. Anterolateral and anterior portals were used for joint space and external compartment. The acetabular component stability was tested with 4 mm thick switching stick.

After joint arthroscopy two distal portals were done. Arthroscope and radiofrequency probe were introduced under fluoroscopic control. Trochanter minor was exposed under visualization. Ileopsoas tendon was identified and released properly so trochanter minor was cleaned circumferentially.

### *Patient 1*

54 year old male, history of lower back pain and right hip arthrosis. After 2 years of right hip resurfacing arthroplasty with BHR got severe inguinal pain without any trauma. Mildly vertical acetabulum component in 50°. Otherwise components in good position. No signs of infection, aspirations and bone scan normal. Suspicion of impingement between femoral collum and anterior rim of cup. Little bony bumper taken off in hip arthroscopy. No relief for the pain. Clinically strong suspicion of ileopsoas impingement but only a mild relief of pain after local anesthetic injection. Endoscopic ileopsoas release was done and gave total relief of symptoms for 4 months but then symptoms started again. There was no infection and total revision for conventional cementless metal on polyethylene THR was done. Unfortunately patient is still having this inguinal pain.

### *Patient 2*

76 years old female, history of lumbar spine degeneration, no operations. Due to arthrosis right hip THR with Exeter cemented prosthesis. Left hip THR done

5 years after right THR. Severe inguinal pain 4 years after THR without trauma. Conservative treatment gave no relief for inguinal pain and by the time patient started to have also moderate lateral pain. Needed two crutches for walking. No infection or component loosening. Good pain relief with local anesthetic injection. Endoscopic ileopsoas release was done after 21 months period of inguinal pain. After release inguinal pain has been absent for 2 years, but lateral pain still affecting gait rhythm so still needs one crutch for walking.

### *Patient 3*

65 year old female, previous back problem, no operations. Both hips total replacement with cementless prosthesis. Right knee total replacement 3 years after right THR. After TKA started to have severe inguinal pain. Need for two crutches mainly due to lumbar spine problems. Clinically ileopsoas tendonitis and local anesthetic injection gave total pain relief for two days. After endoscopic ileopsoas release inguinal pain is absent but due to other disabilities still need for 2 crutches.

### *Patient 4*

53 year old male with cementless THR on left with metal-on-metal large head articulation due DDH. Markedly anteverted cup, otherwise components well positioned. Inguinal pain started after two years. No infection. Local anesthetic injection gave painless time for 24 hours but pain came back. Also lateral pain in single leg stance and suspicion of ileopsoas impingement and gluteus medius and minimus ruptures. Endoscopic ileopsoas release and gluteal tendon reinsertion was done. There were no complications but in the joint fluid aspiration taken in the beginning of the operation metal ion levels were high (Cr 427 µg/ml, Co 241 µg/ml) consistent with metal ion problem.

### *Patient 5*

46- year old female, Bilateral hip arthrosis. Left HRA done with BHR components. 3 mm space between cup and bottom of acetabulum and prominent anterior edge of cup. Otherwise good component positioning. Joint fluid culture negative and no radiological evidence of component loosening. Mild bony bumper on anterior collum of femur next to femoral compo-

nent. Clinically internal snapping and ileopsoas tendonitis. Local anesthetic injection gave only moderate pain relief. Metal ions from joint fluid were normal (Cr 10 µg/ml and Co µg/ml). Arthroscopic bone resection for anterior bumper on the femoral collum and endoscopic ileopsoas release made patient asymptomatic.

## Discussion

In our series of five patients there were no infections or other complications associated with endoscopic ileopsoas release. Three of the operated patients could not flex their hip for three to four weeks, but all of them had clinically normal hip flexion at the time of three months even if it was mildly weaker than on the contralateral side. Endoscopic ileopsoas tendon release is a safe and reproducible technique in hips without prosthesis (16–19,22,23). In the literature two techniques are described for internal snapping. Tendon can be released from the lesser trochanter (17–19) or at the level of hip joint through anterior capsulotomy (16,22,23). We preferred tenotomy from the lesser trochanter due to previous hip replacement and possible lack of anatomical landmarks in the hip joint. Possible disadvantage of tendon release from lesser trochanter is possibility of adhesions between tendon and surrounding scar tissue.

Three of the six operated patients had other underlying reason for hip pain than ileopsoas tendonitis, despite clinical manifestation. That points out to the need of careful differential diagnosis of ileopsoas tendonitis. We have changed our differential diagnostics so that if there is MoM articulation, metal-ion levels are measured from joint-fluid and blood sample to rule out bearing problems. Corticosteroids are now added to diagnostic local anesthetic injection to reinforce conservative treatment. Patients must be informed that ileopsoas release will help only for inguinal pain. Possible lateral pain due to altered gait rhythm will help only with time and muscle balance exercises. Gluteal muscle tendon ruptures must be kept in mind if there is marked lateral pain in one leg stance or even Trendelenburg gait.

If ileopsoas tendonitis is considered to be the source of inguinal pain after differential diagnostic procedure, endoscopic ileopsoas release is safe and minimally invasive technique.

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