



## Hip Arthroscopic Tenotomy for Combined Iliopsoas Tendon Impingement and Snapping Hip after Total Hip Replacement

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The combination of iliopsoas tendon impingement and snapping hip syndrome with persistent hip pain is rare in patients following total hip replacement (THR). Diagnosis should be made by clinical physical examination, with the exclusion of complications following THR by imaging or laboratory studies. Accurate diagnosis and adequate treatment can result in an excellent outcome and patient satisfaction. Hip arthroscopy can resolve both iliopsoas tendon impingement and snapping hip syndrome with minimally invasive surgery, immediate improvement, and rapid recovery.

**Key words:** Snapping hip syndrome, iliopsoas tendon impingement, hip arthroscopy, total hip replacement

### INTRODUCTION

Total hip replacement (THR) is commonly performed. Persistent hip pain after THR can be due to infection, aseptic loosening, occult fracture, and heterotopic ossification. One study reported a 4.3% incidence of iliopsoas tendon impingement after THR. The cause might be oversized or malpositioned cup or extruding bone cement. Some cases have no obvious cause.<sup>1</sup> Snapping hip syndrome after THR has also been reported. Increased femoral offset might increase the tension between greater trochanter and iliotibial band, which may induce snapping hip syndrome.<sup>2</sup> We report a patient with both snapping hip and iliopsoas tendon impingement syndrome successfully treated with arthroscopic release.

### CASE REPORT

A 56-year-old woman with a history of bilateral hip dysplasia and osteoarthritis underwent bilateral THR about 10 years previously. An audible snap was noted over both hips, with pain during exercise. Physical examination showed tenderness and an audible snap over both inguinal regions and the lateral aspect of the upper thigh. Plain films showed

good position and acceptable size of the acetabular cup without obvious implant loosening or liner wear [Figure 1]. Conservative treatment with nonsteroidal anti-inflammatory drugs failed, and she was admitted for surgical treatment. Arthroscopic iliopsoas tendon release through the peripheral compartment of the right hip was performed to resolve the problem of iliopsoas tendon impingement. The operative findings showed the iliopsoas tendon on the anteromedial aspect of the acetabular cup edge. Partial iliopsoas tenotomy was performed [Figure 2]. After surgery, the audible snap over the inguinal region resolved. However, painful snapping over the lateral thigh around the greater trochanter region persisted. About 2 months later, arthroscopic iliotibial band release of the right hip was also performed [Figure 3]. The symptoms were relieved and the audible snap disappeared completely after surgery. The visual analog scale score improved from 6 to 2, showing immediate pain relief and a good surgical outcome. The patient could walk and perform light exercise and was discharged the day after the operation. A rapid recovery period and shorter hospitalization are the advantages of arthroscopic surgery. The right hip symptoms did not recur after 2 months of follow-up, and the patient underwent arthroscopic partial iliopsoas tenotomy of the left

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Iliopsoas impingement and snapping hip after THR

hip. Immediate relief of the painful audible snap of the left hip was noted after the operation. After 1 year of follow-up,

there has been no recurrence of hip symptoms. The patient was able to tolerate the snapping left hip and did not require surgical treatment.

DISCUSSION

The combination of snapping hip syndrome and iliopsoas tendon impingement after total hip arthroplasty is rare. Larsen and Gebuhr reported four cases with snapping hip syndrome following THR.<sup>2</sup> The typical clinical features are an audible snap, with tenderness over the greater trochanter region of the lateral thigh on hip extension. The patients were treated with open partial iliotibial band release. Compared with a traditional procedure, arthroscopic surgery has the

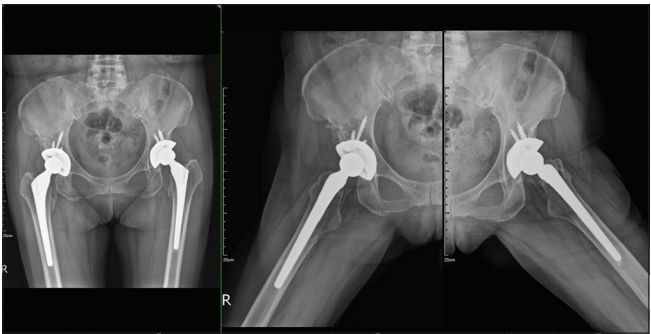


Figure 1: Bilateral hip X-ray, no obvious implant loosening or liner wear

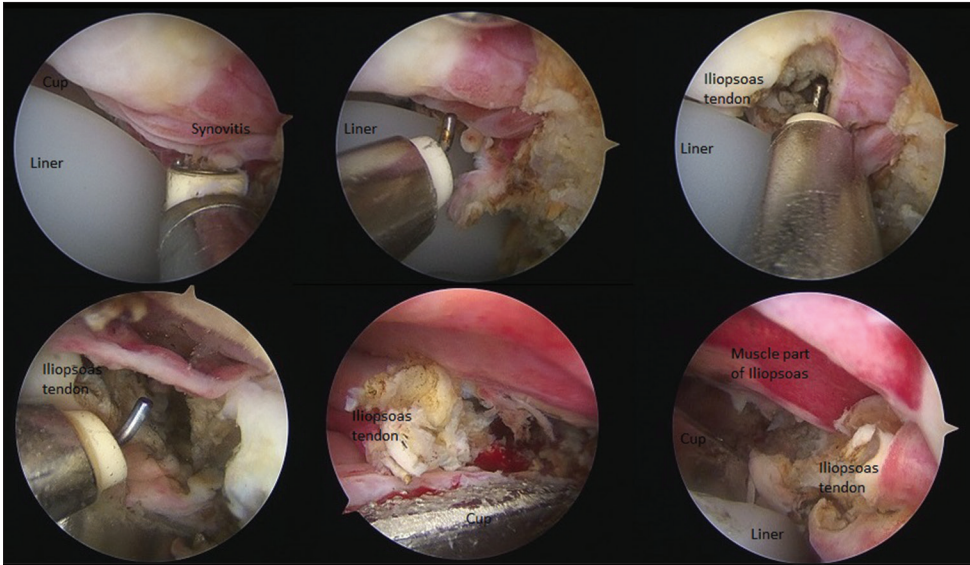


Figure 2: Arthroscopic iliopsoas tendon release through the peripheral compartment

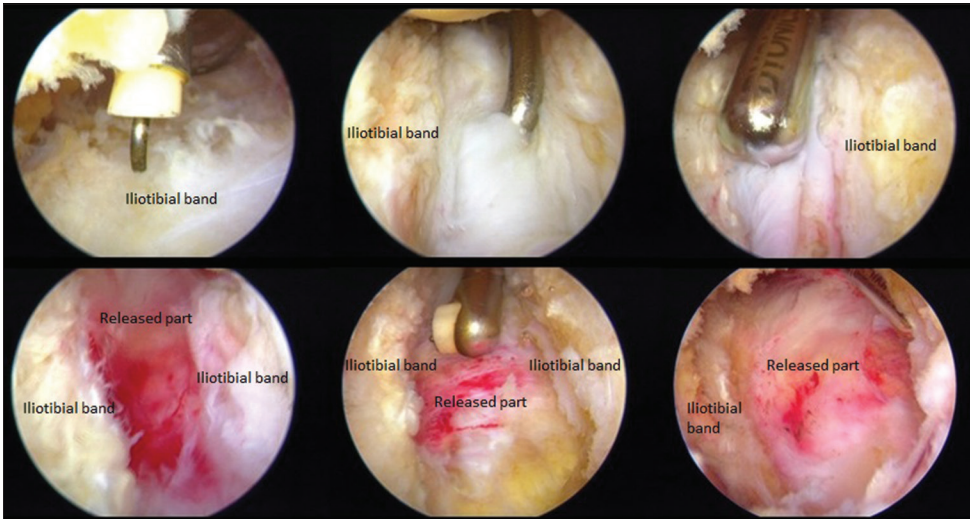


Figure 3: Arthroscopic iliotibial band release

advantage of a small incision, less blood loss, and a rapid recovery period. In 2013, Jerosch *et al.* reported 35 patients with iliopsoas impingement after THR who underwent arthroscopic iliopsoas tenotomy; 33 of these patients had immediate relief of hip pain.<sup>3</sup> In 2011, one study reported nine patients who underwent arthroscopic iliopsoas tenotomy for persistent groin pain after THR. No complication was noted and all patients had almost complete pain relief.<sup>4</sup> Arthroscopic iliopsoas tenotomy can be performed inside the hip joint and through the joint capsule. Another approach is outside the hip joint and inside the psoas bursa, closer to the lesser trochanter. Both methods show similar good prognosis with immediate improvement and rapid recovery.<sup>5-7</sup> Traditional treatment includes nonsteroidal anti-inflammatory drugs, physical therapy, stretching exercises, local injection, and open iliopsoas tendon lengthening. Conservative treatment, local injection, and stretching exercises show limited efficacy, and open iliopsoas tendon release has a high complication rate with poor outcomes and satisfaction.<sup>5</sup>

## CONCLUSION

The complaint of discomfort over the hip joint region after THR is common. An imaging study is necessary to exclude prosthesis-related problems. However, detailed history taking and physical examination are also important, especially in a patient with a normal imaging study and no obvious technique problem or complication in THR. If the clinical features and physical examination reveal a typical, painful audible snap, hip arthroscopy is an excellent option for the treatment of either iliopsoas tendon impingement or snapping hip syndrome. This minimally invasive procedure has many advantages, including a small surgical wound, less blood loss, a shorter hospital stay, and satisfactory outcomes.

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## Conflicts of interest

There are no conflicts of interest.

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