

Ultrasound imaging and guided hydrodilatation for the diagnosis and treatment of internal snapping hip syndrome

Dear Editor,

A 42-year-old male started jogging and weight training half a year ago. He described that he also suffered audible sounds with intermittent pain over his right inguinal area during hip flexion and extension thereafter. Since the discomfort was relieved by medication and physical modalities, he was referred for an ultrasound (US) examination for the affected hip. Static US imaging showed no effusion over the right anterior hip recess with normal echotexture of the iliopsoas muscle and tendon. Dynamic US examination was first performed by placing the transducer in the short-axis plane with the hip flexed and abducted (Figure 1A). When the hip returned to the neutral position, the iliopsoas tendon was observed to

abruptly glide medial to the iliacus muscle above the iliofemoral ligament (Figure 1B, Video S1). A flash of the iliopsoas tendon was visualized during repeated hip flexion and extension (Figure 1C, Video S1). US guided hydrodilatation with a mixture of 5 mL 50% dextrose and 5 mL 1% lidocaine was introduced between the iliacus muscle and iliopsoas tendon (Figure 1D, Video S1). The snapping phenomenon immediately improved after the injection (Video S1). An exercise program incorporating hip stretching and core muscle strengthening was then given and there was no symptom recurrence at the 3-month follow-up.

Snapping hip syndrome affects 5%-10% in the general population.¹ Its prevalence is higher in the young physically-active group

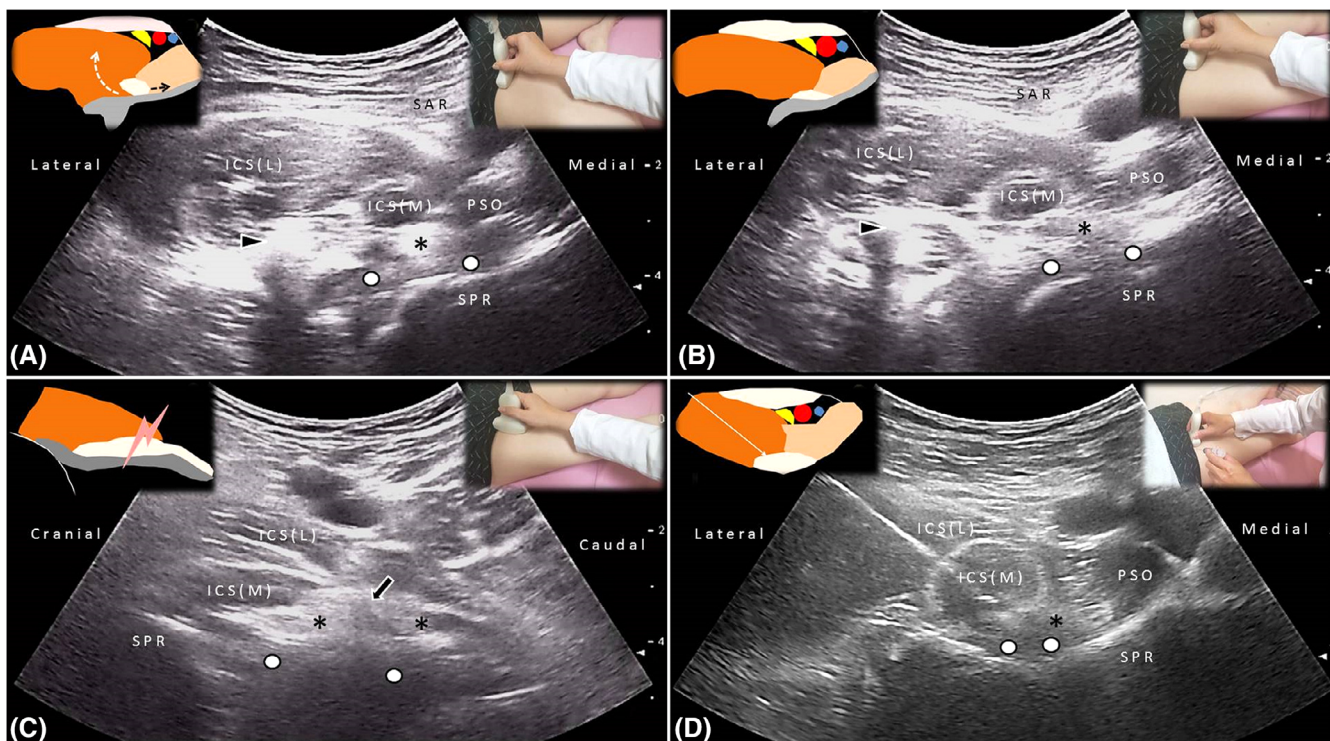


FIGURE 1 The iliopsoas tendon (*) is encircled by the iliacus muscle when the hip is flexed and externally rotated (A). The iliopsoas tendon abruptly glided medially when the hip is extended to the neutral position (B). A flash (arrow) of the iliopsoas tendon is visualized during repeated hip flexion and extension (C). Ultrasound guided hydrodilatation with a mixture of 5 mL 50% dextrose and 5 mL 1% lidocaine is introduced between the iliacus muscle and iliopsoas tendon (D). Arrowhead: anterior inferior iliac spine; White circles: iliofemoral ligament. Abbreviations: ICS (L), iliacus muscle (lateral compartment); ICS (M), iliacus muscle (medial compartment); PSO, psoas muscle; SAR, sartorius muscle; SPR, superior pubic ramus

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due to their wider ranges of hip motions—causing the snapping phenomenon.¹ There are two major types of snapping hip syndrome. External snapping hip develops following uncoordinated movements between the iliotibial tract and gluteus medius tendon,² whereas internal snapping hip occurs because of abnormal sliding of the iliopsoas tendon or intra-articular pathology.³ Dynamic US imaging is helpful in differentiating various forms of snapping hip syndrome. In our case, there were typical US findings of internal snapping hip, showing abrupt gliding of the iliopsoas tendon against the medial compartment of the iliacus muscle and the superior pubic ramus during hip flexion and extension.

We speculate that intensive weight training and jogging activities might lead to hypertrophy of the iliacus muscle and the subsequent snapping. During hip flexion and external rotation, the iliopsoas tendon is encircled by the slack iliacus muscle. Once the hip is extended to the neutral position, the enlarged iliacus muscle is stretched and forces the iliopsoas tendon to suddenly move medially on top of the superior pubic ramus. Hydrodilating the space between the iliopsoas tendon and iliacus muscle reduces the tension exerted on the iliopsoas tendon upon hip extension. Since iliopsoas tendinopathy might develop after repeated hip snapping, we preferred using 25% dextrose as the main regimen for its regenerative potential on degenerative tendon pathology.^{2,4} Hip stretching exercises and trunk muscle strengthening should be emphasized because the snapping is likely to recur if the pathological biomechanical loading is not normalized. In short, the present case demonstrates usefulness of static/dynamic US imaging to clarify the causes of snapping hip as well as to intervene under guidance.

CONFLICT OF INTEREST

All authors declare no conflict of interest.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.