

# May Hips with Inflammatory Synovial Tissue Bands Worsen the Symptoms of Femoroacetabular Impingement Patients? A Two-case Report

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To the editor: A 29-year-old woman presented with persistent left hip pain. Her pain began about 2 years prior, and she had no history of notable trauma, inflammatory joint disease, or pediatric hip disease. The  $\alpha$  angle<sup>[1]</sup> was 62° in anteroposterior position (AP), and 63° in frog position [Figure 1a]. The right hip joint space was well-preserved. The magnetic resonance arthrography (MRA) results showed an anterior and posterior labral tear [Figure 1b]. In another case, a 35-year-old man presented with right hip pain. His pain had begun about 10 years prior and was particularly bad when he was driving a vehicle. The  $\alpha$  angle of his right femur was 60° in AP, and 66° in frog position [Figure 1c]. The joint space of the patient's right hip was not well-preserved. MRA also showed labral detachment [Figure 1d]. Both patients had completed a trial of nonsteroidal anti-inflammatory drugs (NSAIDs) and physical therapy without relief of symptoms. Intra-articular injection of corticosteroids and lidocaine provided excellent relief of symptoms. Neither of them had a surgical history. Both patients were diagnosed femoroacetabular impingement (FAI). The risks and benefits of open surgery addressing the impingement and associated labral damages were reviewed. Both patients underwent hip surgery with the Ganz surgical hip dislocation technique. Intraoperatively, a lateral incision and a greater trochanteric flip osteotomy with the patient in the lateral position on a radiolucent table were adopted. The short external rotators including the piriformis and posterior aspect of the capsule were left intact. A Z-shaped anterior capsulotomy was performed with the superior limb of the capsulotomy taken from the acetabular origin, and the inferior limb taken from the femoral attachment; then, the femoral head was dislocated anteriorly.<sup>[2]</sup> The rigid tissue bands were discovered at the posterior medial side of the femoral neck in both cases and was totally removed [Figure 1e] with care taken not to disrupt circulation to the femoral head.

The greater trochanter was fixed with three screws in both cases. The removed specimens were found to be inflamed synovial tissues in postoperative pathology examinations. Postoperative anticoagulation was adopted, and both patients stayed in the hospital for 3 days postoperatively. The patients were instructed to limit weight-bearing ( $\leq 15$  kg) for 3 weeks, increasing it gradually thereafter and aiming toward full weight-bearing without pain by 3 months after the operation. The range of hip motion was limited ( $\leq 100^\circ$ ) to avoid pain during the first 4 postoperative weeks. Both patients complied with our routine protocol. The patient in Case I recovered without any complaints; however, 2 months after the operation, the patient in Case II developed continuous ankle pain for a week. He had no notable trauma, strenuous activity, or systemic disease, and an X-ray revealed a normal appearing hip and ankle. He was prescribed an NSAID for pain relief for 1 week, after which the ankle pain subsided. Fortunately, both patients were able to sit and climb stairs comfortably by their 3-month postoperative follow-up appointments, and neither walked with a clinical limp or Trendelenburg gait. Both patients were able to resume their normal live activities without discomfort, and the patient in Case II returned to the work as a bus driver. At their 6-month follow-up examinations, the patients' Harris hip scores had recovered from 64 to 100 (Case I) and from 50 to 98 (Case II), and the anterior and posterior impingement signs were negative in both cases. No obvious structural changes were observed in the 1-year follow-up radiographs in either case [Figure 1f and 1g].

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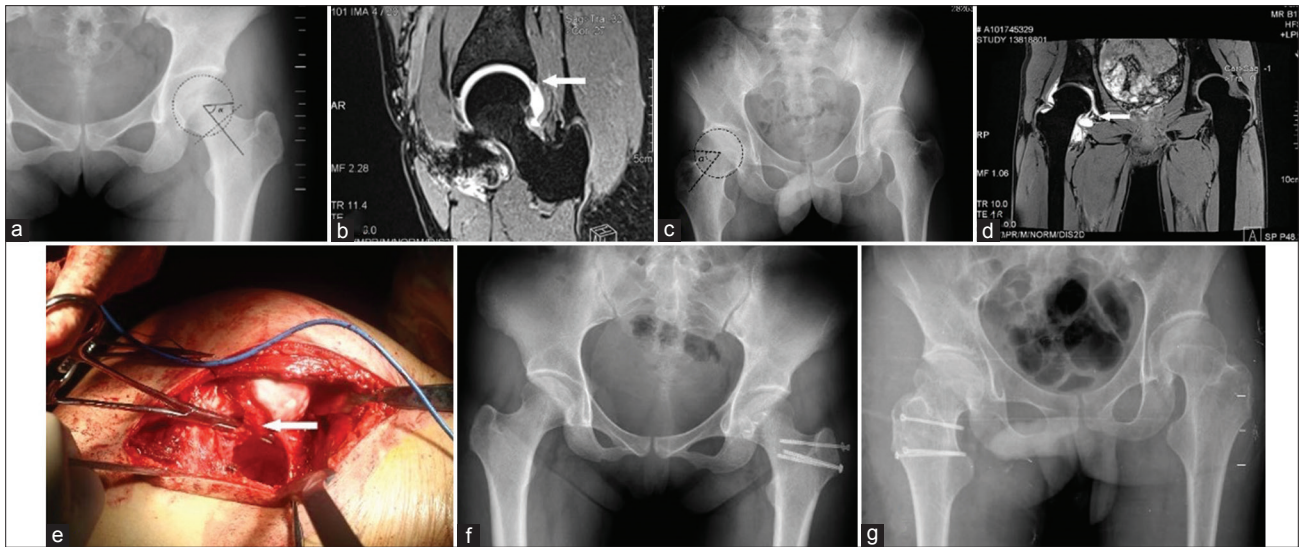
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**Figure 1:** (a) Case I showed an abnormal  $\alpha$  angle in AP radiograph; (b) A posterior labral tear (arrow) was shown in sagittal MRAs of Case I; (c) Case II shown an abnormal  $\alpha$  angle and reduced joint space in AP radiograph; (d) a labral tear (arrow) was shown in and coronal MRAs of Case II; (e) a rigid band was found in the posterior medial side of the femoral neck (arrow) and was removed. (f) 12 months postoperatively radiograph of Case I; (g) 12 months postoperatively radiograph of Case II. AP: Anteroposterior position; MRA: Magnetic resonance arthrography.

The impingement located at the anterior lateral and posterior side of labrum in both patients. The abnormal  $\alpha$  angle of femoral neck referred to cam-type impingement could be accountable for the anterior lateral labrum tear.<sup>[1]</sup> On the other hand, both hips were found of posterior labral tear which located opposite to synovial bands. Therefore, we proposed that the rigid bands formed by the local synovial tissues in the posterior side of the femoral neck may impinge and damage the posterior labrum in the motion of hip flexion to extension position. To our observation, only 2 among 31 patients with FAI were discovered such rigid bands which located in restricted area rather than widely distributed around the femoral neck. Several possible etiologies of such synovial bands may be as following: First, local inflammatory response may result in synovial hyperplasia or synovitis.<sup>[3]</sup> Second, this inflammatory synovial rigid bands may originate from Weibrecht ligament which is also known as retinaculum of Weibrecht or synovial folds. The Weibrecht ligament is commonly seen at the anterior, medial, or lateral side of the femoral neck.<sup>[4]</sup> Third, hip plica may also be one of the possible origins. Synovial plica has been reported in other joint such as knee, shoulder, and ankle,<sup>[5]</sup> it may indicate such plica also exist in hip joint. In our opinion, this inflammatory synovial tissue locating posterior of the femoral neck tissue has a close relationship with posterior labral tear in both

patients. Though the exact etiology remains to be elucidated, we suggest that doctors would better to explore and remove inflammatory synovial tissue bands, especially at the posterior side of femoral neck, during operations of FAI patients with both anterior and posterior labral tear.

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### Conflicts of interest

There are no conflicts of interest.

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