Efficacy of Intra-articular Steroid Injection in Patients with Femoroacetabular Impingement

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Femoroacetabular Impingement (FAI) arises from morphological abnormalities between the proximal femur and acetabulum. Impingement caused by these morphologic abnormalities induces early degenerative changes in the hip joint. Furthermore, FAI patients complain of severe pain and limited range of motion in the hip, but a guideline for treatment of FAI has not yet been established. Medication, supportive physical treatment and surgical procedures have been used in the treatment of the FAI patients; however, the efficacies of these treatments have been limited. Here, we report the diagnosis and treatment for 3 cases of FAI patients. Intra-articular (IA) steroid injection of the hip joint was performed in all three patients. After IA injection, pain was reduced and function had improved for up to three months. (Korean J Pain 2013; 26: 154-159)

Key Words:
- femoroacetabular impingement
- hip osteoarthritis
- intra-articular injection

Femoroacetabular Impingement (FAI) is a syndrome from the abnormal collision of hip joint which changes the morphology. FAI progresses gradually to secondary hip osteoarthritis (OA) in young patients because structural abnormalities induce impingement. FAI is classified into two typical types, and there are combinations of the two types. The first is the cam type in which the radius of the femur head is increased due to excess bone at the head-neck junction or to an unusual shaped pistol grip deformity or asphericity of the femur head. The second is the pincer type which is caused by an abnormality of the acetabulum and by the orientation of the acetabulum within the pelvis [1] (Fig. 1). Repetitive trauma causes an early hip OA in the beginning of the disease; thereafter, acetabular labrum tearing and excruciating pain develop [1]. There is no established guideline for treatment although medication, supportive physical treatment and surgical procedures have been used in FAI patients. On the other hand, the effect of intra-articular (IA) steroid injection in hip OA has been proven in previous studies [2,3]. The main effects of IA steroid injection in hip OA are pain control and reduced synovial hypertrophy [3]. It was reported that these effects persist over 8 weeks [4]. Therefore, we thought that IA steroid injection would be beneficial in FAI because it has an an-
ti-inflammatory effect. We report here the experience of diagnosing and treating 3 cases of FAI.

**CASE REPORT**

1. FAI patient with cam type who had undergone previous arthroscopic surgery

A 42-year-old male patient (height 170 cm, weight 63.7 kg) visited our pain clinic with complaint of severe right groin pain. Two years earlier, the patient had been diagnosed with bilateral cam type FAI and underwent arthroscopic surgery in the right hip after hip magnetic resonance imaging which showed fibrocystic change of the right femur and superior labral tear and minimal joint effusion on both hips. The recurrent pain began about 1 year prior to his visit and walking was impossible. The degree of pain was 10/10 on the visual analogue score system (VAS, ranging from 0 = no pain to 10 = absolutely intolerable pain) and the Oxford hip score (OHS, function of hip joint, excellent = below 19, good function = 19-26, fair = 27-33, poor = 33 or more) was 47/60. During the physical examination, the straight leg raising test (SLR) was right 45° and left 80°. The FABER test and anterior impingement test (flexion and internal rotation of knee) were all positive at the right hip. The frog lateral view of the X-ray showed left superior labral calcification and an osteophyte at the

Fig. 1. Type of femoroacetabular impingement. (A) Normal hip joint. (B) Cam type (arrow: decreased head-neck offset of femur). (C) Pincer type (arrow: excessive bony coverage by the acetabular rim). (D) Mixed type.

Fig. 2. Simple radiographic classification of femoroacetabular impingement. (A) Cam type (frog lateral view of hip). (B) Pincer type (anteroposterior view of hip). (C) Mixed type (frog lateral view of hip).

Fig. 3. Measurement of the alpha angle of the hip. The alpha angle is the measured angle between the line connecting the point of no sphericity of the femoral head from the center of the femoral head and the other line extending up to the center of the femoral head from the center of the femoral neck at the narrowest point. Translateral view of hip is used.