

# Acceleration of coxarthrosis by an exostosis causing femoroacetabular impingement

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## ABSTRACT

Here we describe a 28-year-old man with a history of right hip pain for the past 11 years and ankylosing spondylitis for the past 6 months. Imaging studies showed an exostosis in the femoral neck causing femoroacetabular impingement. The patient was diagnosed with coxarthrosis. This case report suggests that femoroacetabular impingement may accelerate the degenerative process in the hip joint.

**Keywords:** Femoroacetabular Impingement; Exostosis

## 1. INTRODUCTION

Femoroacetabular impingement, also known as hip impingement syndrome, refers to a condition in which the femoral head-neck junction impinges upon the acetabulum, thereby being a potential cause of hip osteoarthritis [1,2]. Two types of impingement are defined according to the anatomic structures involved. Cam impingement occurs when the contact arises from an abnormality in the femur and pincer impingement is defined as that which results when the abnormality originates from the acetabulum [3]. Both types are characterized by damage to the acetabular labrum and articular cartilage in the hip [4,5]. These changes lead to degenerative osteoarthritis in the long term [5,6]. Here, we describe a patient who has femoroacetabular impingement due to a bone mass in the femoral neck and coxarthrosis. We could not find any case which demonstrates acceleration of coxarthrosis by an exostosis causing femoroacetabular impingement in the literature.

## 2. CASE REPORT

A 28-year-old male presented at our hospital with a history of right hip pain for the past 11 years which had become increasingly worse in the past 3 years, up to the point at which he decided to seek treatment. He was cur-

rently working as a waiter. Six months prior to this presentation he had been diagnosed with ankylosing spondylitis and was currently taking salazoprine, methotrexate and indomethacin regularly. He was a nonsmoker and had no history of athletic activity which could explain his findings. He also reported having back pain and morning stiffness for the past 3 years.

On physical examination of the right hip, flexion, abduction, external rotation and external rotation were limited. There was 45 degree maximum flexion, 10 degree maximum extension and 10 degree maximum abduction in the right hip joint. Internal and external rotation of the right hip was also markedly restricted. Anteflexion, extension and lateral bending of the lumbar region were limited.

Pelvic x-ray showed an exostosis in the right femoral neck. Also visible in the right hip were narrowing of the hip joint, subchondral sclerosis and osteophytes. There was also sclerosis and narrowing in the sacroiliac joint, indicating bilateral sacroileitis which is a finding of ankylosing spondylitis (**Figure 1**). CT and MRI demonstrated



**Figure 1.** An anteroposterior pelvic radiograph shows cam impingement due to exostosis of the femoral neck and coxarthrosis in the right hip.

femoroacetabular impingement caused by the exostosis (Figures 2,3).

Conservative treatment has been decided upon for the time being because the patient is young and can still perform his activities of daily life.

### 3. DISCUSSIONS

Femoroacetabular impingement has been recognized as



**Figure 2.** Coronal computed tomography of the right hip demonstrates femoroacetabular cam impingement due to an exostosis in the femoral neck and findings of coxarthrosis.



**Figure 3.** Magnetic Resonance Imaging of the right hip demonstrates femoroacetabular cam impingement due to an exostosis in the femoral neck and findings of coxarthrosis.

an underlying cause of hip pain and secondary osteoarthritis [1] and occurs in two main forms: cam-type impingement and pincer-type impingement. Cam-type impingement occurs when the anterior femoral neck abnormally impinges on the on the acetabulum and labrum, resulting in damage to the labrum [7,8]. Pincer-type impingement occurs when an osteophyte on the anterior acetabulum impinges on the anterior femoral neck during hip flexion or retroversion of the acetabulum [9,10].

We found cam-type impingement due to the exostosis on the femoral neck in our patient. For the coxarthrosis that developed, another possible etiological factor was the ankylosing spondylitis; however, the patient had no other risk factors for coxarthrosis such as smoking, alcoholism, steroid use, obesity, female gender, repetitive occupational trauma, or neuromuscular or metabolic disorders. Protrusio acetabuli may develop in as many as one third of patients and hip joint involvement typically is bilateral and symmetric. Absence of the protrusion of the both acetabulum and the unilateral nature of the coxarthrosis suggest that the impingement caused by the exostosis had accelerated the degeneration of the hip joint.

Although there are a range of treatment options for hip impingement syndrome [1], nonsurgical treatment generally does not control symptoms [11]. By preventing microtrauma, early treatment may help preserve the joint by averting the impingement that may lead to coxarthrosis [8]. Our patient presented later in the course of the disease, with hip osteoarthritis symptoms that were apparently due indirectly to the nearby tumor, which itself was not painful.

In conclusion, femoral neck exostosis may accelerate the progression of coxarthrosis by cam impingement. Early diagnosis is therefore important in preventing this degenerative process.

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