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**Title:** Central acetabular osteophyte (saber tooth sign) and periacetabular arthrosis (seagull sign), two of the earliest signs of osteoarthritis of the hip joint

**Abstract:** Early treatment of femoro-acetabular hip impingement may delay the progression of the hip joint to osteoarthritis. Success of impingement surgery depends on presence and severity of existing hip arthritis. Currently Tönnis grade is used to assess severity of early arthritis in the hip joint. We assess two radiological signs of arthritis (Seagull and Sabre tooth signs) which may be visible on plain radiograph of the hip joint and is present in computer tomography of the hip joint even prior to the loss of joint space which is caused by acetabular osteophytosis.

**Methods:** We analyzed preoperative radiograph from 37 patients over 40 years of age who underwent hip arthroscopy for hip impingement. We assessed presence of these signs against severity of hip arthrosis based on the Tönnis grade.

**Results:** We found a strong relationship between Sabre tooth sign and Tönnis grade ( $\text{Chi}^2= 3.9$ ,  $\text{DF}=1$ ,  $P<0.05$ ) but not the Seagull sign and the Tönnis grade ( $\text{Chi}^2= 0.33$ ,  $\text{DF}=1$ ,  $P>0.55$ ). Sabre tooth sign predated joint narrowing in 50% of cases.

**In conclusion:** We describe Seagull and Sabre tooth signs as two radiological signs of hip arthrosis. Sabre tooth sign but not seagull sign is universally present when joint narrowing present. Sabre tooth sign is often present even when joint narrowing is not.