Effect of Tumor Necrosis Factor Inhibitors on Hip Involvement in Ankylosing Spondylitis: Is Structural Repair Possible?

To the Editor:

We read with interest the published manuscript by Konsta et al1 assessing the prevalence of hip involvement in patients with ankylosing spondylitis (AS) and its associated factors. Hip involvement was found in 38% of cases, and it was associated with the presence of syndesmophytes and peripheral arthritis.

In a previous study including patients with spondyloarthritis, we found that hip involvement was associated with disease duration over 10 years, the presence of radiographic sacroilitis, very high disease activity (Ankylosing Spondylitis Disease Activity Score using C-reactive protein [ASDAS-CRP] ≥ 3.5), and more limited spine mobility.2

Hip involvement is a significant cause of pain and disability in patients with AS. Its therapeutic management is challenging since no treatment has demonstrated its effectiveness.

Tumor necrosis factor inhibitors (TNFi) have been proven effective on activity parameters of AS, functional impairment, and spinal mobility. Data assessing the effect of TNFi on structural damage, notably hip involvement, are scarce.

Konsta et al1 assessed the effect of TNFi on the radiographic progression of hip involvement. They included 263 patients with hip AS under sustained TNFi for at least 2 years. During the follow-up period, they demonstrated that hip radiographic scores remained unchanged, and 8 (3%) patients underwent a total hip replacement. However, the authors did not specify whether they found cases of reparative radiographic changes in hip joints treated with TNFi.

Indeed, structural repair has been reported in a few cases. Here we describe a case of a 45-year-old woman who presented with a 10-month history of inflammatory low back pain and groin pain with limping.

Physical examination showed a limited range of motion of the lumbar spine and a painful and restricted left hip. A pelvic radiograph showed bilateral ankylosis of the sacroiliac joints and a destructive left hip joint (Figure 1A,B). Laboratory findings revealed increased inflammatory markers with a high C-reactive protein level (17 mg/L; normal value < 6 mg/L). A diagnosis of ankylosing spondylitis was made.

Physical therapy was initiated, with some improvement in pain and mobility. However, after 6 months, the patient reported increased hip pain and stiffness. Radiographs taken 2 years after the initiation of treatment showed structural improvement with a widening hip joint space (Figure 1C,D). Treatment with adalimumab was initiated, and the patient reported a significant improvement in pain and mobility.

Figure 1. Pelvic radiograph done (A,B) before tumor necrosis factor inhibitor treatment showing bilateral ankylosis of sacroiliac joint and destructive left hip joint (arrow); and (C,D) 2 years after the initiation of this treatment, revealing structural improvement with a widening hip joint space (arrow).

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of AS with left hip involvement was established based on the 2009 Assessment of Spondyloarthritis international Society (ASAS) classification criteria. The disease activity was high (ASDAS-CRP: 4.84). Hip involvement was responsible for significant functional impairment (Lequesne index of the left hip: 16). Adalimumab (40 mg/2 weeks) was prescribed, leading to symptom alleviation. After 2 years of follow-up, ASDAS-CRP and Lequesne index decreased to 2.2 and 10, respectively. A structural improvement was also noted (Figure 1C,D). Indeed, the Bath Ankylosing Spondylitis Radiology Hip Index (BASRI-hip) fell from 4 to 2.

TNFi can improve functional impairment and inflammatory lesions. Indeed, 75% of inflammatory lesions detected by magnetic resonance imaging disappear after 24 weeks of treatment with TNFi. TNFi has been shown to alleviate hip pain and decrease the number of inflammatory ultrasound lesions and positive power Doppler.

Nevertheless, its effect on radiographic structural damage is still unclear. Several observational studies demonstrated a reduction in the radiographic progression of the hip joint in patients with AS. In our case, treatment with TNFi led to a widening of hip joint space width. Likewise, Song et al reported 6 patients with AS with hip involvement treated with TNFi. The authors demonstrated that the BASRI score improved from 3 points to 2 points in these patients, and the mean joint space width values increased from 0.88 (SD 0.79) cm to 2.24 (SD 0.42) cm after a mean treatment duration of 1.97 (SD 1.3) years (P = 0.03).

These findings suggest that TNFi can improve clinical and structural damage of hip involvement in patients with AS. The associated factors with reparative radiographic changes in hip joints treated with TNFi are unknown, and longitudinal studies are necessary to determine these factors.

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