

PROFESSIONAL DANCERS' HIP: CORRELATION OF CLINICAL AND mri FINDINGS

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Background:

Professional ballet dancers use extreme hip range of motion to achieve ideal ballet technique. The aim of the study was to clinically evaluate professional dancers hip and to correlate the findings to MRI examination.

Materials and methods:

20 professional female ballet dancers completed questionnaires specifically looking at pain and activities in dancing. All dancers underwent a complete physical examination of the hip. MRI in supine position and while doing splits was performed and followed by motion capture.

Results:

2 dancers complained of inguinal hip pain (VAS 2-6) while doing « grand battement à la seconde », « grand plié » and « développé à la seconde ». Pain could be reproduced by the anterior impingement test for 7 of them. The main hip range of motion (ROM) in flexion/extension is 133/0/19 (range 115-150/0/10-25), and 33/0/56 (range 5-50/0/30-80) in internal/external rotation (supine, 90° hip flexion). The 20 dancers could be divided in 4 groups: 1-pain and lesions on MRI (11 dancers), 2- pain and normal MRI (1 dancer), 3- no pain but lesions on MRI (3 dancers), 4- no pain and normal MRI (5 dancers). Out of the 11 dancers with hip pain and labral and/or cartilaginous lesions on MRI (group 1), alpha angle, acetabular depth and neck-shaft angle were normal, except for one of them who had an alpha angle of 66° and 76° at anterior and anterosuperior position respectively, corresponding to a cam morphology.

Conclusion:

Professional ballet dancers presenting hip pain have labrum and/or acetabular cartilaginous lesions in the superior or postero-superior position of the acetabular rim on MRI. Only one hip presented a cam impingement explaining these lesions. For the others, such lesions can be explained by repetitive extreme hip flexion and rotation while dancing. Dancers' hip ROM is normal in flexion/extension but internal rotation tends to be lower and external rotation higher than normal, in relation to the turnout position.