Sex-related Differences in Pelvic Morphology in Acetabular Dysplasia

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Abstract

Acetabular dysplasia occurs more commonly in female than in male subjects. Although sex differences in pelvic morphology of subjects with acetabular dysplasia and without advanced osteoarthritis might be expected, there is little published information to support this contention. We retrospectively investigated sex differences in morphologic features of the pelvises of patients with acetabular dysplasia. We reviewed CT scans of 73 hips in 67 patients（17 male, 50 female subjects; mean age 38 years, range 13–66）with acetabular dysplasia to evaluate rotational alignment of the innominate bone in the axial plane and measure the acetabular sector angles to evaluate acetabular coverage of the femoral head. Male pelvises were narrower than female ones at the level of the greater pelvis through the inferior pelvic aperture. In female pelvises, internal rotation of the innominate bone correlated negatively with the anterior direction and positively with the posterior direction whereas in male pelvises, it correlated negatively with superior direction. Sex differences in pelvises with acetabular dysplasia are characterised by the rotational alignment of the innominate bone and direction of dysplasia.

Key words: Acetabular dysplasia, Sex difference, Pelvic morphology, Acetabular sector angle