

Fibrous Cartilage Formation in the Acetabular Fossa after Periacetabular Osteotomy: Evaluation of the Related Factors and Clinical Outcomes

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Abstract

Background: We performed second-look arthroscopy at approximately 1 year after periacetabular osteotomy (PAO) to evaluate fibrous cartilage formation in the acetabular fossa, and to explore the related factors such as the hip morphological features associated with such fibrous cartilage formation.

Methods: We performed PAO combined with hip arthroscopy in 64 patients (63 women, 1 man; mean age, 38.3 years at the time of primary operation) who underwent second-look arthroscopy and were included in this study. Patients with a Perthes disease were excluded. Patients were divided into two groups based on the presence or absence of fibrous cartilage formation (formation group, 37 hips; non-formation group, 27 hips). The formation group and non-formation group were compared for age, body mass index (BMI), period between primary operation and second-look arthroscopy, Harris hip score (HHS), and radiographic parameters, including the lateral center-edge (CE) angle, acetabular roof obliquity (ARO), vertical-center-anterior (VCA) angle, and depth of the acetabular fossa (DAF).

Results: We found that patients in the formation group had superior postoperative HHS to patients in the non-formation group ($P < 0.05$). DAF was significantly higher in the non-formation group than in the formation group ($P < 0.05$). There was no significant difference between the two groups in terms of age ($P = 0.40$), BMI ($P = 0.45$), lateral CE angle ($P = 0.62$), ARO ($P = 0.35$), or VCA angle ($P = 0.26$) at the time of primary PAO as well as at the time of second-look arthroscopy.

Conclusion: Patients who showed fibrous cartilage formation in the acetabular fossa had a better HHS than those without fibrous cartilage formation.

Key words: Second-look arthroscopy, Periacetabular osteotomy, Developmental dysplasia of the hip, Acetabular fossa, Fibrous cartilage formation