MRI of Joint Fluid in Femoral Head Osteonecrosis

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摘要

Abstract

Objective: To evaluate the relationship between joint fluid, intramedullary pressure (IMP), bone marrow edema, and stages of osteonecrosis of the femoral head (ONFH). MATERIAL AND METHODS: We reviewed the magnetic resonance (MR) images of 28 patientswith 40 documented ONFHs. IMP was measured in 16 symptomatic hips. The amount of joint fluid was graded as 0 (no fluid), 1 (fluid <5 mm in width), or 2 (fluid >/= 5 mm in width) adjacent to the entire length of the femoral neck. Associated focal anddiffuse bone marrow abnormalities were evaluated. A control group of 29 recruited individuals without symptoms related to hip disease were examined. Follow-up MR images were obtained in four patients (five affected hips) 6-10 months after core decompression. RESULTS:Of the 40 affected hips, the severity of ONFH was divided into stages 0 (n=4), I (n=28), and II (n=8 hips) on MR findings. The correlation of joint fluid to IMP and to the presence of bone marrow edema was poor. The amount of joint fluid correlated significantly with the stage of ONFH. None of the five affected hips showed decreased joint fluid on follow-up MR images. CONCLUSION:The amount of joint fluid correlates well with the stage of ONFH. The amount of joint fluid doesnot correlate with IMP or bone marrow edema.