Comparison study of MR-arthrography and Arthroscopy in Partial thickness Rotator Cuff Tears

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Partial thickness rotator cuff tear has been recognized increasingly in recent years as a source of shoulder disability and deserves more clinical attention. The purpose of this study was to assess the ability of MR arthrography to recognize the patterns of partial thickness rotator cuff tears.

Between May 2002 and July 2005, 237 consecutive patients with high suspicion of rotator cuff disease were prospectively evaluated in this study. All patients were examined with MR-arthrography and arthroscopy. Of 237 patients, 124 patients had partial rotator cuff tears, which confirmed arthroscopically. Exclusion criteria included overhead athletes, full thickness tear of rotator cuff, previous shoulder surgery and inflammatory arthritis. The arthroscopy diagnosis was divided into 3 groups; articular side (n=63), bursal side (n=41) and both articular and bursal side (n=20). The findings of MR-arthrography and arthroscopy were measured for the parameters including location and size. The ability of MR-arthrography to predict the patterns of tears between the locations were evaluated. Imaging measurement < 5 mm of those obtained at arthroscopy were considered correct.

MR-arthrography correctly predicted the size of 72% of the articular side tears and 15% of bursal side tears. Articular side tears were overestimated and bursal side tears were underestimated by MR-arthrography ($p<0.05$). Both sides tears were overestimated as full thickness tears.

MR-arthrography may be useful tool in diagnosing partial thickness rotator cuff tears but has limitations in bursal side tears. It is necessary to inspect subacromial space arthroscopically for identifying unpredicted tears because bursal side partial thickness rotator cuff tears could be undetected or underestimated.