Radiological and clinical outcome of lateral ankle instability with medial compartment osteoarthritis

Sungwook Kim, MD, Hong-Geun Jung, MD, PhD, Jong-Soo Lee, MMed(Orth), Hwa Jun Kang, MD, Mao Yuan Sun, MMed(Orth)

Category: Ankle, Ankle Arthritis, osteoarthritis, ankle instability

Keywords: lateral ankle instability; medial compartment; osteoarthritis; stabilization

Introduction/Purpose: When lateral ankle instability (LAI) is not treated for a long period, unbalanced loading on medial ankle may proceed to osteoarthritis (OA). Outcome studies about osteoarthritis with lateral ankle instability after stabilization, however, have rarely been reported. The authors have investigated the radiological and clinical outcome of ligament stabilization for LAI with medial compartment OA.

Methods: The study is based on 25 ankles of LAI with medial compartment ankle OA that underwent lateral ankle ligament reconstruction from 2007 to 2014 with at least 1 year follow-up. The medial ankle OA was diagnosed with degenerative change of medial ankle on plain X-ray or MRI or arthroscopic findings. The OA was classified using Takakura stage, and arthroscopic degenerative change was classified by modified Outerbridge grading. Ligament stabilization surgery was done using either modified Broström procedure or lateral ligament reconstruction using semitendinosus tendon allograft. Arthroscopic synovectomy, debridement, and microfracture for osteochondral lesion were performed when needed. Clinical outcomes were evaluated using visual analogue scale (VAS) pain score, American Orthopedic Foot and Ankle Society (AOFAS) ankle-hindfoot score, Karlsson-Peterson score, and subjective patient satisfaction. Statistical analysis were done using Wilcoxon signed rank test.

Results: The average instability duration was 98 (range, 12-480) months and the average follow up period was 46 (range, 13-108) months. Preoperative Takakura stage was mostly I (n=19, 76%) and II (n=4, 17%), and was same postoperatively. MRI OA findings of 18 ankles were medial cartilage denudation (17%), cartilage thinning/erosion (44%), medial osteophyte (50%), and loose bodies (30%). Modified Outerbridge grade 2 and 4 were most common (both 41%). The VAS pain score decreased from 6.1 ± 1.6 preoperatively to 1.8 ± 1.6 postoperatively (P<0.05). The AOFAS score improved from 61.8 ± 14.7 preoperatively to 90.0 ± 6.3 postoperatively, and the Karlsson-Peterson score improved from 54.5 ± 14.4 to 89.4 ± 8.4 (P<0.05). There were no significant complications. All patients were satisfied.

Conclusion: Ligament stabilization accompanied with arthroscopic procedure could draw good outcome, even without structural bony deformity correction. Even with no improvement in plain radiograph, functional score could be improved.