

A comparative study of intermediate-term prognosis between surgical and non-surgical treatments for early-stage osteoarthritis conjunction with chronic ankle instability

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INTRODUCTION: Repetitive ankle sprains can cause various intra-articular pathologies including cartilage damage, and there is a relatively clear consensus on the relationship between chronic ankle instability and osteoarthritis. However, information on the natural course in patients with chronic ankle instability and treatment options for preventing degenerative changes remain limited. This study aimed to compare the intermediate-term prognoses between patients with surgical and non-surgical treatment.

METHODS: This study included 44 patients who underwent lateral stabilization procedure (anatomical ligament repair or reconstruction) and 62 patients with conservative treatment (medication and intra-articular injection) for chronic ankle instability conjunction with early-stage arthritis of Takakura grade 2. Daily living and sport activities were evaluated using the Foot and Ankle Ability Measure (FAAM), and ankle pain scores during walking were measured with visual analogue scale (VAS). Progression of osteoarthritis was evaluated through periodic weight-bearing radiographs. Additionally, the correlation between clinical evaluation score and the presence of progressive osteoarthritis was analyzed.

RESULTS:

The FAAM score significantly improved from a mean of 48.8 points preoperatively to 83.6 points at final follow-up ($p < .001$) in the surgical group, while it also improved in the non-surgical group from a mean of 65.9 points to 74.1 points ($p = .188$). There was no significant difference in daily living ability of the FAAM score between the two groups at final follow-up (88.6 vs 81.4 points, $p = .385$), but the surgical group showed better results than the non-surgical group in sports ability (79.4 vs. 67.3 points, $p < .001$). VAS for ankle pain during walking at final follow-up showed no significant difference between the surgical group (mean 1.8 point) and the non-surgical group (mean 2.7 point) ($p = .102$). The incidence of progression of osteoarthritis grade on radiographic evaluation was not significantly different between the surgery group (7 patients, 15.9%) and the non-surgical group (11 patients, 17.7%) ($p = .861$). There was a significant difference in the FAAM score between patients with and without progressive osteoarthritis in both groups. On a mean follow-up of 7.8 years, mechanical and subjective instability recurred in 3 patients (6.8%) in surgical group. While 7 patients (11.3%) in non-surgical group underwent surgical intervention due to worsening pain or instability.

DISCUSSION AND CONCLUSION:

Patients with early medial osteoarthritis accompanied by chronic lateral ankle instability who underwent surgical and non-surgical treatment showed similar intermediate-term clinical outcomes. However, in terms of sports activity ability, the surgical group showed superior results compared to the non-surgical group. The radiological prognosis based on the Takakura grade of degenerative arthritis also showed similar results in both groups, indicating that various variables other than chronic ankle instability contribute to the progression of degenerative change. In addition, both the surgical and non-surgical groups showed a significant correlation between clinical evaluation scores and the presence of progressive osteoarthritis.



Progression of osteoarthritis following lateral stabilizing surgery