Can Generalized Ligamentous Laxity be an Obstacle to Perform Minimally Invasive Surgery for Moderate Hallux Valgus?
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Category: Bunion

Keywords: hallux valgus, minimally invasive surgery, generalized ligamentous laxity

Introduction/Purpose: Minimally invasive surgical techniques have challenged objectives in hallux valgus surgery, attempting to obtain good clinical outcomes with the least damage to anatomic structures, low complication rates, short time of surgery, cosmetic advantages and an earlier recovery. However, because patients with generalized ligamentous laxity have a major risk for recurrence, arthrodesis of the first tarsometatarsal (TMT) joint is an established method for the surgical treatment of the patients with generalized ligamentous laxity. This study aims to investigate the clinical and radiographic outcomes of joint-preserving minimally invasive distal metatarsal osteotomy in moderate hallux valgus patients with generalized ligamentous laxity.

Methods: Thirty-two feet from 29 patients were involved prospectively with mean follow-up of 16.8 (range, 10 – 26) months. Generalized ligamentous laxity was assessed in all patients and the patients were divided into two groups (16 : 16) with the result. Clinical outcomes were assessed using visual analogue scale (VAS), American Orthopaedic Foot and Ankle Society (AOFAS) score and Foot and Ankle Outcome Score (FAOS). Radiographic parameters were evaluated by preoperative and postoperative weight bearing radiographs.

Results: Mean tourniquet time was 30.4 (range, 19 – 44) minute and additional procedures were required in 6 cases in each group. The mean VAS (p<0.001), AOFAS score (p<0.001) and three FAOS subscales (Pain, Symptoms and Quality-of-Life) (p=0.003, p=0.002 and p<0.001) improved significantly at the last follow-up. Significant corrections in the hallux valgus angle (HVA), intermetatarsal angle (IMA), distal metatarsal articular angle (DMAA) and sesamoid reduction were obtained at the last follow-up (p<0.001). Relative first metatarsal length was decreased 2.8% from preoperative length (p<0.001). No other radiographic outcomes showed significant difference between the 2 groups but the mean relative first metatarsal length was shorter in the group without generalized ligamentous laxity (p=0.014, respectively) at the last follow-up.

Conclusion: Despite the patients without generalized ligamentous laxity tended to have shorter first metatarsal bone postoperatively, minimally invasive distal metatarsal osteotomy yielded substantial clinical and radiological results without any recurrence or fixation failure. This procedure can be a reasonable alternative to first TMT arthrodesis in patients with moderate hallux valgus even with generalized ligamentous laxity.