Comparison Between With Kirschner-wires Only And Combined Screw Fixation in Proximal Reverse Chevron osteotomy(PCMO) For Hallux Valgus Deformity

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

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Introduction/Purpose: Kirschner-wires fixation, sometimes we have encountered pin irritation or pull-out. This is the reason why we consider additional fixation. Moreover, there are few reports according to comparison of fixation method, and Most of them focused on comparison K-wires or screw fixation only. Purpose of study is to compare clinical and radiographic outcome between Kirschner-wires only and combined screw fixation.

Methods: The study included two different groups according to fixation methods. One with Kirschner-wires fixation (KW group) included 117 feet (of 98 patients), the other with combined screw fixation (KWS group) 56 feet (of 40 patients) with moderate to severe hallux valgus. Clinically, the preoperative and final follow-up visual analog scale (VAS) pain scores, the preoperative and final follow-up American Orthopaedic Foot & Ankle Society (AOFAS) hallux metatarsophalangeal (MTP)-interphalangeal (IP) scores, and patient satisfaction after the surgery were evaluated. Radiographically, the hallux valgus angle (HVA), intermetatarsal angle (IMA), medial sesamoid position (MSP), and first to fifth metatarsal width (1-5MTW) were analyzed before and after surgery.

Results: The mean AOFAS score improved preoperative 65.5 to 95.3 at final follow up in group A, while preoperative 56.5 to 88.6 at final follow up. Pain VAS decreased from 5.7 to 0.5 in group A, whereas from 6.2 to 1.6 in group B. The mean HVA all improved from preoperative 38.5 to 9.3 at final follow up in group A and 34.7 to 9.1 in group B. The mean IMA and MSP also improved significantly at final follow up. In comparative analysis, the IMA did not show significant difference between postoperative and final state in group A, while showed significant increase in group B.

Conclusion: We achieved favorable clinical and radiographic outcomes with minimal complications in patient with moderate to severe hallux valgus in both groups. However, this study shows no statistically significant difference in IMA during follow-up period and lower recurrence rate. Therefore we need to consider combined fixation method to provide better stability and can expect lower recurrence rate.

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