

Percutaneous Chevron Akin (Peca) Osteotomy for Treatment of Hallux Valgus Deformity: The Long-Term Results

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Introduction/Purpose: Little is known about the long-term results of percutaneous hallux valgus correction, particularly the recurrence rate and factors leading to recurrence.

Methods: We retrospectively reviewed a single surgeon consecutive series of percutaneous chevron and akin osteotomies (PECA) performed between 2012-14 on 127 feet in 86 patients. Mean age was 52+-13 years at surgery and mean follow up (FU) was 69+-7 months. Patient reported outcome measures (PROMs) were completed by 65 patients (MOXFQ, VAS pain (0-100)) and Likert satisfaction scale by 86 patients. Pre-operative, 6 month and final follow up weight bearing radiographs were available for 68 feet. Radiological parameters measured were the hallux valgus angle (HVA) and 1-2 intermetatarsal angle (IMA). The data was normally distributed and presented as mean+-SD. Paired t-test was used to compare pre- and post-operative angles. Ordinal logistic regression was used to test for significant dependent variables on PROMs.

Results: Mean MOXFQ was 10+-16 and mean VAS pain was 6+-13 out of 100 at a mean FU of 69+-7 months. 99% (85/86) patients were highly satisfied or satisfied. Mean HVA improved from 28.3+-8.1° to 8.4+-5.6° at final FU ($p<0.001$). No clinically relevant difference in HVA was seen between 6 months and final FU. Mean IMA improved from 12.7+-2.9° to 6.2+-2.7° at final FU ($p<0.001$). 2.9% (2/68) had an HVA $>20^\circ$ at final FU, these both started with a pre-operative HVA $>40^\circ$. Pre-operative HVA $>40^\circ$ was significantly more likely to have an HVA $>20^\circ$ at final FU than those with pre-operative HVA $<40^\circ$ (22% vs 0%, $p<0.001$). There were 5 re-operations for removal of screws. 1 foot had hallux varus, but was still satisfied.

Conclusion: The 5 year results for PECA hallux valgus correction show high levels of patient satisfaction, function and pain relief, with low complication and re-operation rates. Radiological correction is maintained at long term FU.

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