Abnormal metatarsal length, whether genetic or iatrogenic, alters pressure distribution of the forefoot and is a key contributor to forefoot pain. Several surgical methods have been proposed to address this problem with metatarsal shortening surgery being commonplace today (1,2,3). The Weil osteotomy is the most commonly performed procedure (2,5), but it carries a complication rate of up to 36%; most notably the floating toe. Causes for floating toe are multifactorial. The most prominent is the shifting of the center of rotation of the MTPJ by depression of the capital fragment and the subsequent effect on the action of the foot intrinsic muscles (6, 7). To address this issue, recent publications have advocated the shaft osteotomy for axial shortening of the metatarsal; at the same time, these authors have reported a significant incidence of non-union and/or delayed union of these transverse, diaphyseal osteotomies (8).

We are presenting our initial experience with a new technique of axial mid-shaft oblique osteotomy for metatarsal shortening. A new plate designed with a medial flange and an integral cutting guide was used to make and fix oblique metatarsal shaft osteotomies in 20 patients who required metatarsal shortening to alleviate forefoot pain. Post operative protocol allowed weight bearing as tolerated in a hard sole shoe using a cane for balance. Concomitant procedures included bunion correction, hammertoe repairs, bunionette repairs and proximal phalanx (Akin) osteotomies. Metatarsal Length (ML) of the 1st ray and operative ray as well as the Metatarsal Protrusion Distances (MPD) were measured on pre-operative and post-operative x-rays. ML for the operative ray decreased by an average of 8.42 ± 4.35mm (p<0.0004); the 2nd arc decreased an average of 6.97 ± 6.28mm (p<0.002). The difference between the length of the 1st met and 2nd met was decreased by an average of 5.70 ± 4.54mm (p<0.0007) while the MPD was decreased by an average of 4.16 ± 2.36mm (p<0.00004). All osteotomies exhibited clinical healing at the most recent follow-up. Alignment was maintained at an average 6 week follow up. One patient developed a floating toe (5%). Conclusion: In this preliminary study, oblique metatarsal shaft osteotomies using a unique plate with an integral cutting guide and flange technology proved radiographically effective in short term follow-up. This technique appears to be a viable alternative for the surgeon in the treatment of painful Metatarsalgia.