

SHORT TERM CORRECTION AND COMPLICATION RATE OF COTTON OSTEOTOMY USING TITANIUM TRUSS WEDGES WITHOUT SUPPLEMENTAL FIXATION

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INTRODUCTION: The Cotton osteotomy is a commonly used adjunctive procedure in flatfoot and forefoot reconstructive surgeries. It is described as a medial cuneiform dorsal opening wedge osteotomy used to plantarflex the medial column. The original execution of the Cotton osteotomy utilized bone autograft or allograft wedges to maintain the plantarflexed position, however metal truss wedges are becoming a widely accepted alternative to allograft. The clinical outcomes of metal truss wedge implants are promising, but not well published in the literature. The purpose of this study is to analyze the clinical and radiographic outcomes of the Cotton osteotomy using titanium truss wedges without supplemental fixation.

METHODS: A retrospective chart review of patients above the age of 14 who underwent a Cotton osteotomy with a titanium truss at our institution from 2017-2020 was performed. Patients in which allograft bone wedge grafting was utilized, or the use of supplemental fixation at the osteotomy site, were excluded. Complications were reviewed including the need for future surgery, revisions, and infections. Radiographic outcomes were reviewed including lucency, subsidence, and radiographic deformity correction.

RESULTS: Sixty-one patients met inclusion criteria. Thirty one patients concomitantly underwent flexible flatfoot hindfoot reconstruction at the time of surgery and 30 patients underwent hindfoot arthrodesis procedures. The mean length of follow up was 8 months. There were no complications related to the Cotton osteotomy site, including revisions, need for removal of hardware, deep infections, gross subsidence, and periprosthetic lucency > 2mm. There was maintained improvement in all radiographic parameters measured post-operatively.

DISCUSSION AND CONCLUSION: The use of a titanium trabecular wedge without supplemental fixation for the Cotton osteotomy in flatfoot reconstructive surgery is a safe and effective technique to maintain medial column plantar flexion correction. There are low rates of clinical and radiographic complications. There is predictable maintenance of radiographic deformity correction with this technique.