

# ANALYSIS OF A MODIFIED EVANS OSTEOTOMY USING 4WEB MEDICAL'S OSTEOTOMY TRUSS SYSTEM

## QUICK FACTS

- The 4WEB OTS Wedge was used in conjunction with the modified Evans Osteotomy procedure for deformity correction
- 28 cases
- No radiographic evidence of implant subsidence or migration
- No radiographic evidence showing loss of anatomical correction
- Radiographic and clinical evidence of osteotomy and implant stability

*All cases were performed by Charles E. Cook, M.D., Texas Institute for Surgery*

## PURPOSE

To characterize the use and early results of the modified Evans Osteotomy (Z-Osteotomy) procedure incorporating the 4WEB® Medical Osteotomy Truss System™ (OTS), in the correction of adult *pes planus* (flatfoot) and calcaneal lengthening. In these cases, loss of deformity correction is of paramount concern.<sup>1,2</sup> The purpose of this technical brief is to summarize the clinical and radiographic evidence for maintenance of the surgical correction.

## METHODS

The modified Evans Osteotomy (Z-Osteotomy) procedure starts as a vertical cut supero-distally, posteriorly to the calcaneocuboid joint and distal to the angle of Gissane, then extends proximally parallel to the plantar foot and incorporates a proximal plantar cut.<sup>1</sup> The 4WEB OTS Wedge implants are seated 1.5mm below the superior edge of the cortex to ensure no implant / inferior Talus contact. Final correction and placement are confirmed fluoroscopically.

The 4WEB OTS Wedge is designed as an open architecture titanium truss structure designed to provide mechanical support with open space throughout the implant for osseous incorporation. The OTS Wedge is intended to be used for internal bone fixation or osteotomies in the foot.

Supplemental fixation is required when using the 4WEB OTS Wedges.



## Patient Cohort Summary

Anterior-posterior (AP) and lateral radiographs were performed and assessed for maintenance of correction.

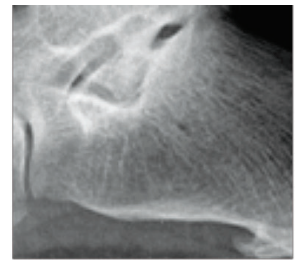
- All cases performed between January, 2014 and February, 2015
- 28 cases
- 10 Males (36%), 18 Females (64%)
- Left in 17 (61%), Right in 11 (39%)

## RESULTS

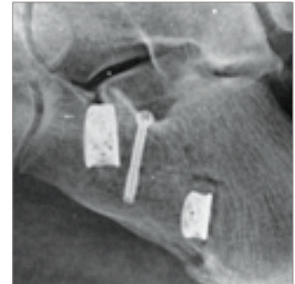
The following outcomes were observed:

- Relief of pain and restoration of function.
- No radiographic evidence of subsidence or migration.
- No radiographic evidence showing loss of anatomical correction.
- Radiographic evidence of osteotomy and implant stability.
- Two cases (7%) required revision procedures unrelated to the 4WEB OTS Wedge.

### PRE-OPERATIVE



### 1-MONTH FOLLOW-UP



### 12-MONTH FOLLOW-UP



## SUMMARY

The modified Evans Osteotomy (Z-Osteotomy) is a method for the surgical correction of adult *pes planus* deformity (flatfoot) with calcaneal lengthening. The clinical and radiographic results reveal that the 4WEB OTS Wedge can be used to achieve successful outcomes in modified Evans Osteotomy (Z-Osteotomy) procedures.

#### REFERENCES:

- 1) Tennant JN, Carmont M, Phisitkul P: Calcaneus Osteotomy. *Curr Rev Musculoskelet Med.* 7(4): 271-276, 2014
- 2) Scott RT, Berlet GC: Calcaneal Z Osteotomy for Extra-articular Correction of Hindfoot Valgus. *J Foot Ankle Surg.* 52(3): 406-408, 2013.