

# Outcome and Complications After 1<sup>st</sup> Metatarsophalangeal Joint Fusion At An Average Of 10 Years

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## Introduction

Fusion of the 1<sup>st</sup> metatarsophalangeal joint (MTPJ) is a common procedure used for the treatment of end stage arthritis [1]. We studied a cohort of patients who underwent an isolated 1<sup>st</sup> MTPJ Fusion for the treatment of hallux rigidus. We reported on the 10 year clinical outcomes for our cohort of patients, as well as complication rates and the indications and requirements for further surgical intervention .

## Methods

All patients, who underwent an isolated 1<sup>st</sup> MTPJ Fusion for osteoarthritis from June 2008 until November 2011 were included in this retrospective study. Demographics, clinical outcome data looking at the rate of a successful fusion, infection and subsequent procedures performed were collected from a departmental database (Bluesprier) and analysed. Mean follow up was 10.85 (range 9-12) years.

## Results

A total of 161 patients (183 feet) underwent an isolated 1<sup>st</sup> MTPJ fusion during this time period. The mean age of patients undergoing surgery was 60.03 years (range 31-86 years). 156 of the feet showed a successful fusion (85.2% fusion rate); 27 patients required revision surgery, 19 (10.4%) for a symptomatic non-union and 8 (4.4%) for mal-union.



Figure 1- X-ray of hallux rigidus, that didn't heal with initial screw fixation and went on to have plate fixation

There were no significant factors when determining the rate of non-union. Those patients with co-morbidities (diabetes and gout) required revision earlier than those without ( $p < 0.01$ ).

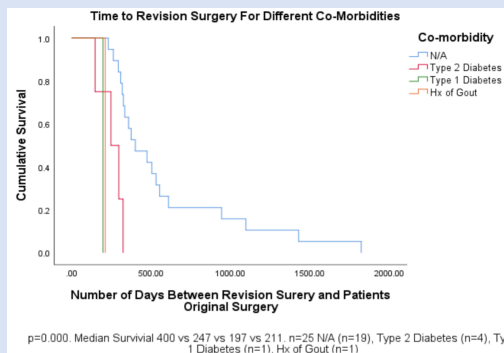


Figure 2- Kaplan Meir Survival of Co-Morbidities Requiring Further Surgery

3.8% of the patients developed superficial wound complications and 16.4% required metalwork removal, with a statistically significant propensity towards females ( $p = 0.08$ ).

	Metalwork Removal?		
	No	Yes	Total
Female	88	25	113
Male	65	5	70
Total	153 (83.6%)	30 (16.4%)	183 (100%)

Figure 3- Number of Males and Females that Required Metalwork Removal

## Conclusion

Overall, the long-term results of the 1<sup>st</sup> MTPJ fusion had good outcomes with a successful fusion rate and minimal complications, both in line with the corresponding literature. There were no significant factors when determining the rate of non-union, whilst our previously outlined co-morbidities had a significant impact on the time to revision of the arthrodesis ( $p < 0.001$ ). The female sex increased the risk of the need for metalwork removal ( $p = 0.08$ ).

## Next Steps

In future, we plan to do a functional questionnaire for the patients, to determine the effect that a 1<sup>st</sup> MTPJ fusion can have on quality of life.

## References

1. Deland, J.T. and Williams, B.R., 2012. Surgical management of hallux rigidus. *JAAOS-Journal of the American Academy of Orthopaedic Surgeons*, 20(6), pp.347-358.