The incidence of 1st MTPJ OA in the presence of hallux valgus

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Introduction

- There is an established association between the degree of hallux valgus (HV) and increasing clinical and radiological signs of osteoarthritis of the 1st MTPJ (1st MTPJ OA) (Bock et al 2004; Weingeld et al; 1988).

- The incidence of HV in conjunction with 1st MTPJ OA has not been fully described, although it has been proposed that HV can protect against 1st MTPJ OA (Coughlin et al, 2003)

- There is an increasing number of 1st MTP joint replacements for 1st MTPJ OA on the market contra-indicated in the presence of >20 degrees of HV.

- The objective of our study is to quantify the incidence of symptomatic 1st MTPJ OA presenting with HV deformity >20 degrees
Methodology

- We assessed the radiographs of 151 consecutive 1st MTPJ fusions, operated on by multiple surgeons at our specialist centre between Oct 2008 and Oct 2011.

- Exclusion criteria: patients with inflammatory arthritis, and revision procedures were excluded.

- We measured the HV, IMA, DMMA and HIP angle for all patients pre and post operatively.

- Two independent reviewers assessed all radiographs.
Results

- Thirty-two patients did not meet the inclusion criteria and were excluded leaving 119 patients to be assessed.

- The kappa value for the inter-observer reliability was, $\kappa = 0.7$ (P<0.05) showing good agreement between reviewers.

- All patients had grade of OA than grade II (Meyerson) which was confirmed at time of operation.
We stratified the deformity spectrum of pre-operative Hallux Valgus (HV) angles with the IMA, DMAA and grade of osteoarthritis at presentation. Of the 33 patients that had hallux valgus deformity greater than 20 degrees we found that the grade of OA increased with HV deformity, as did IMA and DMAA.
Results

- The range of HV angles were 5.6-56.6 degrees (average 18.2°) and the range of associated IMA angles were 12.8° (1.5-25).

- Forty (34%) patients had a HVA greater than 20° preoperatively (mean 28.18°; range 20.1-56.6°) and an average IMA of 15.8.

- An increasing hallux valgus angle correlated with grade of OA (p<0.03)*.
Summary & Conclusions

- Approximately one third of symptomatic 1st MTPJ OA is associated with hallux valgus deformity of 20 degrees or more.

- Therefore as 1st MTPJ replacement becomes more prevalent, it is important for companies and surgeons to recognise that up to a third of patients will be ineligible for this surgery.

- This is important within the context of a renewed interest in 1st MTPJ joint replacement.
We recommend research into this area to either develop strategies to correct hallux valgus prior to or at the same time as joint replacement or for companies to develop implants that can cope with valgus deformity as part of their surgical technique.
References:


- Coughlin MJ, Mann RA, Saltzman CL. Surgery of the foot and ankle. 2007 Mosby Inc.
