

Outcomes of spring ligament reconstruction for idiopathic flexible flatfoot deformity

Andrew Molloy, FRCS(Tr&Orth), Eric Swanton, MBChB, FRACS(Orth), Lyndon Mason, MRCS

Category: Hindfoot

Keywords: Spring Ligament Reconstruction Allograft Flatfoot Pes Planus Idiopathic

Introduction/Purpose: Idiopathic flatfeet are usually caused by attenuation of the medial soft tissues rather than a lateral osseous deficiency. Our prospective study aimed to quantify the functional and radiological outcome of a new technique for spring ligament reconstruction using a hamstring graft for idiopathic flat feet

Methods: Our prospective study included 17 feet in 14 patients, from 05/14 to 05/17, on which a spring ligament reconstruction was performed. This pre-tensioned allograft reconstruction was performed using a blind talar tunnel, with the graft being passed deep to the navicular tuberosity, through a tunnel in the medial cuneiform and then sutured back onto its proximal limb to control abduction. Additional procedures included medial head of gastrocnemius recession (17), calcaneal osteotomy (16), FDL transfer (3), tibialis posterior synovectomy (2), peroneus longus to brevis transfer (2). There was a minimum of 6 months follow-up. Radiographic analysis was performed for standardised parameters. Paired t-test was used for analysis

Results: The average age was 41 (range 23 -65). The mean BMI was 31.1 (range 24.6 – 37.3). Mearys line improved from a mean of 24.1 (9 – 36.4) to a mean of 13.8 (-3.1 – 26.7). This was statistically significant ($p<0.001$). Talar uncoverage angle improved from a mean of 39.5 (27.7 – 55.8) to 23.9 (3.5 – 39.7). First metatarsal talar angle improved from a mean of 18.9 (8.4 – 33.9) to 10.3 (-6.1 – 21.5). There were no wound infections. There was one revision (5.9%) to a triple arthrodesis; at revision it was found that the allograft had attenuated to incompetency. Of the patients that improved the least, 80% (4/5) were over the age of 49. Our numbers are insufficient to statistically analyse this

Conclusion: This new method of spring ligament reconstruction provides a predictable solution for more anatomical reconstruction of idiopathic flatfoot deformity, with statistically significant improvements in all radiographic parameters. Further numbers will be needed but we would exercise caution in using this technique in older patients.

Foot & Ankle Orthopaedics, 3(3)
DOI: 10.1177/2473011418S00357
©The Author(s) 2018