IDENTIFICATION MRI FEATURES CONSISTENTLY ASSOCIATED WITH SURGICALLY PROVEN ABNORMALITY OF SPRING LIGAMENT COMPLEX

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The disclosure is in the final AOFAS program book. I have no potential conflicts with this presentation.
• Literature in respect to the MRI appearances of surgically confirmed spring ligament pathology is sparse [1].
• In response the authors conducted a retrospective review of MRI examinations comprising 13 patients with surgically proven spring ligament abnormality in an attempt to authenticate the present consensus of MRI features associated with spring ligament pathology.
METHODS

• Records for operations performed for planovalgus foot deformity with operation notes confirming presence of spring ligament abnormality were obtained for patients treated 2010-11.

• Of 32 procedures 13 patients (3 male, 10 female) mean age 48.5 (range, 21-86 years) underwent preoperative MRI scanning using a standard musculoskeletal protocol on a T1.5 unit.

• Scans were retrospectively reviewed by one of the senior authors and consultant musculoskeletal radiologist for pathological findings in respect to the spring ligament complex.
RESULTS

- The superio-medial portion of the ligament was abnormal in all 13 scans, most common pathological findings were: thickening of the ligament proximally (>5mm) with distal thinning (<2mm) seen in 8 scans.
- 3 scans demonstrated a complete rupture from the navicular insertion with bunching of the tendon proximally (>5mm).
- Global thickening was confirmed on 1 scan as abnormal with a final abnormality on 1 scan of high signal change at the navicular insertion representing a linear tear.
RESULTS

• The medio-plantar portion demonstrated less consistent abnormal findings: 5 scans demonstrated high midsubstance or navicular insertion signal change thought to represent linear tears.
• Abnormal widening of 7-9.5mm was noted in 4 scans, thinning and loss of striations was reported in 2 scans. For the final 2 scans no abnormality in this portion of the ligament was detected.
PROXIMAL THICKENING DISTAL THINNING SUPERIO-MEDIAL SPRING LIGAMENT
CONCLUSIONS

• MRI favours visualisation of superior-medial over the medio-plantar portion of the spring ligament complex on standard sequences due to the orientation of medio-plantar fibres.

• The most consistent abnormal finding representing spring ligament pathology in this series was thickening/bunching of the superior-medial portion of the ligament >5mm and thinning/absence of the ligaments insertion into the navicular distally (one or more of these features were present in 85% of confirmed ruptures).
CONCLUSIONS

- Our series concurs with the current literature in that surgically significant pathology of the spring ligament complex is best demonstrated in the superior-medial portion on proton density fat-saturated weighted axial cuts [2].
- Surgeons and radiologists should focus on these sequences for the detection of surgically relevant spring ligament abnormality.
REFERENCES
