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The intrinsic subtalar ligaments have a consistent presence, location and morphology

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Highlights

- This study clarifies some points of confusion in terminology and location of the intrinsic subtalar ligaments.
- The cervical ligament has similar dimensions as the ATFL and CFL. This suggests an important function in the stability of the subtalar joint.
- The anterior capsular ligament is a small ligament with a consistent presence and location.
- The interosseous talocalcaneal ligament is a small ligament deeply located in the tarsal canal. Confusion with the ACaL should be avoided.

Abstract

Background

Chronic subtalar instability is a disabling complication after acute ankle sprains. Currently, the literature describing the anatomy of the intrinsic subtalar ligaments is limited and equivocal which causes difficulties in diagnosis and treatment of subtalar instability. The purpose of this study is to assess the anatomical characteristics of the subtalar ligaments and to clarify some points of confusion.

Methods

In 16 cadaveric feet, the dimensions and locations of the subtalar ankle ligaments were assessed and measured. CT-scans before dissection and after indication of the footprints with radio-opaque paint allowed to generate 3D models and assess the footprint characteristics.

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13.9 ± 1.5 mm, posterior length 18.5 ± 2.9 mm, talar width 13.6 ± 2.2 mm, calcaneal width 15.8 ± 3.7 mm. The anterior capsular ligament (ACaL) and interosseous talocalcaneal ligament (ITCL) were found to be smaller structures with consistent dimensions and locations.

Conclusion

This study identified consistent characteristics of the intrinsic subtalar ligaments and clarifies the local anatomical situation. The dimensions and footprints of the intrinsic ligaments of the subtalar joint suggest a more important role of the CL and ACaL in the stability of the subtalar joint. The results of this study are relevant to improve diagnostic tools and offer some guidelines when reconstructing the injured ligaments.

Keywords

Hindfoot instability; Subtalar ligament; Ligament reconstruction; Interosseous talocalcaneal ligament; Anterior capsular ligament; Cervical ligament

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