Middle-term clinical evaluations of the Lisfranc ligament anatomical reconstruction surgery

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Our disclosures are in the final AOFAS Mobile App. We have no potential conflicts with this presentation.
There is no report about clinical evaluations of treatment of anatomical reconstruction of Lisfranc ligament for chronic Lisfranc injury.
Purpose

We report the middle-term outcomes after performing Lisfranc ligament anatomical reconstruction surgery (LARS), using an optimal route of reconstruction based on anatomical measurements of and biomechanical experiments with cadavers.
Material and Methods

- Diagnosed with Lisfarnc joint injury and underwent surgical treatment form 2012-2015
- Subject 20 patients (8 female, 12 male)
- Mean age 35.5yrs (15 - 64yrs)
- Mean follow-up period 35 months (12 – 51 months)
- Acute case 14 cases. Chronic cases 6 cases
Evaluations

- Plain X ray
- Myerson’s classification
- Kaar’s classification
- Clinical evaluation postoperatively
  the Japanese society for surgery of the foot
  (JSSF) midfoot scale  
- Stein’s radiographic assessment  

(Myerson, FAI, 1986) 
(Niki, JOS, 2005) 
(Stein, FAI, 1983)
Results

Pre-operative state

✓ Myerson’s classification
  Type B1  1 case,     Type B2  15 cases
  Type C1  2 cases,    Type C2  2 cases

✓ Kaar’s classification
  Transverse instability (TI)  17 cases
  Longitudinal instability (LI) 3 cases
We reconstructed for

TI case

Lisfranc ligament
Dorsal ligament

LI case

Lisfranc ligament
Dorsal ligament
1st-2nd cuneiform ligament
Post operative evaluation

- Partial weight bearing was encouraged within 6 weeks and return to exercise within 12 weeks.
- Average JSSF scores at final follow-up were 93.8 points in both examples (85-100) respectively.
- Joint congruities on X ray were appropriate in most cases but admitted a little diastasis by one case of chronic and one acute case.
Discussion
To avoid foot deformity and pain after Lisfranc joint injury

- Obtain and keep an anatomical reduction (Mulier, FAI, 2002)
  (Kuo, JBJS-Am., 2000)

Our previous report for anatomical reconstruction for the Lisfranc ligament

- Anatomical considerations for reconstruction of Lisfranc ligament (Hirano, JOS, 2013)

- Newly developed anatomical and functional ligament reconstruction for the Lisfranc joint fracture dislocations: case report (Hirano, Foot Ankle Surg., 2014)

Lisfranc ligament reconstruction keeps anatomical reduction.
Conclusion

LARS achieves both static and dynamic stability, does not require removal of the internal fixation material, and enables all patients to support a full load 8 weeks postoperatively. LARS is beneficial for maintaining anatomical reduction, preserving the joint, and shortening the post-therapy period. Our newly developed ligament reconstruction is not only able to acute injuries but also to the chronic injuries.
References


