Analysis of the clinical patterns and the results of treatment in the first naviculocuneiform coalition

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My disclosure is in the Final AOFAS Program Book

I have no potential conflicts with this presentation.
Patients (pts) with 1st naviculocuneiform coalition

- Jan. 2003 ~ Apr. 2010
- 27 pts (34 feet)
  - operation: 5 pts (6 feet), conservation: 22 pts (28 feet)
- mean f/u period after diagnosis: 25 (range, 6 to 60) months
- mean f/u period after operation: 38.8 (range, 19 to 58) months
Radiographic analysis

- **location of lesions**
  - foot AP: medial → lateral in 1st naviculocuneiform joint
    1, 2, 3, 4: 4 divisions
  - foot lat: inferior → superior
    A, B, C, D: 4 divisions

- **combined with flatfoot**
  - talonavicular coverage angle & talo-1st metatarsal angle

- **morphologic patterns on CT or MRI**
  - 17pts (18 feet)
    CT: 9 feet, MRI: 9 feet
  - irregular, cystic, combined pattern

Kumai et al. Foot and Ankle International, 1996
Materials & Methods

• **Treatments**
  – symptomatic 17 pts:
    \[
    \text{conservative treatment for 6 months}
    \]
    \[
    \text{(short leg cast for 3wks followed by insole)}
    \]
  – no response: 5 pts (6 feet):
    \[
    \text{operation (resection 4, fusion 2) with biopsy}
    \]

• **Clinical analysis**
  – AOFAS scoring between operative and conservative treatment
Results

Asymptomatic 10 pts (16 feet)
- M : F = 2 : 14 feet
- unilateral : bilateral = 7 : 3 pts
- mean age at diagnosis: 34.4 (range, 10 to 68) years

Symptomatic 17 pts (18 feet)
- M : F = 9 : 9 feet
- unilateral : bilateral = 14 : 3 pts
- mean age of symptom onset: 23.6 (range, 7 to 49) years
  - adolescents (7-16yrs): 5 pts (7 feet) with severe exercise: 3 pts
  - adults: 12 pts (11 feet) with severe exercise: 4 pts
- tenderness: plantomedial aspect of 1st naviculo-cuneiform joint
Results

• Postoperative results
  – Resection: 4 feet
    Fusion: 2 feet
  – 50% (resection 2, fusion 1): remained pain at last follow up

• Histological findings
  degenerated fibrocartilages ± calcification
  → non-osseous type

• AOFAS score
  – asymptomatic: 99.3 (range, 98 to 100)
  – symptomatic: 93.6 (range, 75 to 100)
    (a) conservative: 98.3 (range, 90 to 100)
    (b) operative: 88.2 (range, 75 to 100)
Conclusions

• The symptoms of 1st naviculocuneiform coalition may not only be attributed to osseous coalition, but also degenerative change in non-osseous type.

• Since there were no significant differences in treatment results between operative and conservative groups, we recommend the conservative treatment.
References


• Kumai T, Tanaka Y, Takakura Y and Tamai S. Isolated first naviculocuneiform joint coalition. *Foot Ankle Int* 1996;17:635-640