Müller-Weiss Syndrome - Is It Necessary to Remove the Navicular Bone?

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Müller-Weiss Syndrome

- avascular necrosis of the navicular bone
- rare disease
- women are more affected
- initial treatment - conservative
Surgery

- when conservative treatment fails
- arthrodesis is an option

**BUT**

Is it necessary to remove the navicular (avascular) bone to achieve fusion?
Methods

- retrospective study
- arthrodesis from 1994 to 2013
- included Maciera classification types 3 and 4
- 12 patients (12 feet) were included
- mean age at surgery: 44 years
Müller-Weiss Syndrome

Methods

12 feet

**Group A**

- navicular removed
- tricortical iliac crest bone graft

6 feet
- surgery: arthrodesis
- 3 TN + NC
- 1 triple + NC
- 2 TN + NC + CMTT1

**Group B**

- navicular NOT removed

6 feet
- surgery: arthrodesis
- 1 TN + NC
- 1 triple + NC
- 2 triple
- 2 TN

TN = talonavicular
NC = naviculocuneiform
triple = talonavicular + subtalar + calcaneocuboid
CMMT1 = cuneiform - first metatarsal
Results

12 feet

**Group A**
- navicular removed
- tricortical iliac crest bone graft
- 6 feet
  - follow-up: 98 months
  - X-ray fusion: 18 weeks
  - nonunion: 33% (2 feet)
  - nonunion: 1 TN / 1 NC

**Group B**
- navicular NOT removed
- 6 feet
  - follow-up: 140 months
  - X-ray fusion: 16 weeks
  - nonunion: 33% (2 feet)
  - nonunion: 2 TN

pseudoarthrosis → revision = fusion
Results

12 feet

**Group A**
- navicular removed
- tricortical iliac crest bone graft

6 feet
- pre-op AOFAS: 45 points
- pos-op AOFAS: 80 points
- pos-op VAS: 2.5

**Group B**
- navicular NOT removed

6 feet
- pre-op AOFAS: 48 points
- pos-op AOFAS: 79 points
- pos-op VAS: 2.4

VAS = visual analog scale for pain
Conclusion

Based on the results obtained in this study, there are no significant differences between preserving or substituting the navicular bone with tricortical bone graft, when a medial column arthrodesis was performed, in patients with Müller-Weiss Syndrome.
Müller-Weiss Syndrome

References