Measuring Visualized Joint Surface in Hallux MTP Arthroscopy

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- NO CONFLICT TO DISCLOSE
- Our disclosures are in the Final AOFAS Mobile App
- There are no potential conflicts with this presentation
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**BACKGROUND**

- Recent increase in the use of arthroscopy in foot and ankle surgery
- Hallux metatarsophalangeal (MTP) arthroscopy popularized 2000s to treat a variety of conditions including
  - OCD / loose body
  - Sesamoid pathology
  - Synovitis
  - Diagnostic
  - Adjunct for Hallux Rigidus/Hallux Valgus
- Minimal data showing efficacy of this tool
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**BACKGROUND**

- Vaseenon *et al*, 2010
- Able to debride >93% of joint contact surface in preparation for fusion
- Measured ability to instrument, *not* ability to visualize
- Other studies look at clinical outcomes using arthroscopy as an adjunct only
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• GOAL
• Evaluate ability to visualize MTP joint during arthroscopy
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**METHODS**

- 10 fresh cadaveric specimens, right through-knee or above
- Skin traction of 5 lbs through IP, in-line with axis of foot
- Insufflate with saline to 50 cm H2O.
- 1.9 mm 30° scope
- Dorsomedial and dorsolateral portals
- Partial synovectomy
- Curette and Kirshner wires to mark edge of visualized surfaces, both P1 base and MT head
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- METHODS
  - Measure a percentage of surface area on the axial view
  - Measure a percentage of angle on the lateral view
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- **RESULTS** (95% CI)
  - Proximal phalanx (P1):
    - 100% (100-100)
  - Metatarsal Head (MT): Distal View
    - 58% (50-65)
  - Metatarsal Head: Lateral Arc View
    - $72^\circ/199^\circ = 37\% (32 – 41)$
LIMITATIONS

- Performed under traction, so unable to range the joint during procedure:
  - Range of motion may change visualization
- Cadaveric specimens:
  - Soft tissue compliance may differ
  - High specimen age doesn’t match anticipated clinical cohort
- Accessory plantar medial portal was not used, would likely extend visualized range
CONCLUSIONS

100% of the P1 base can be visualized

58% of the MT head can be visualized from an axial view.

37% of the articular arc of the MT head can be visualized from a lateral view

Visualized MT head surface correlates with the overlying P1 base.
REFERENCES


