Subtalar Arthroscopic Surgery Utilizing 1.9-mm Diameter Needle Arthroscopy for Osteochondral Lesions of the Subtalar Joint Without Any Invasive Distraction: A Report of Three Cases

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Conflict of Interest

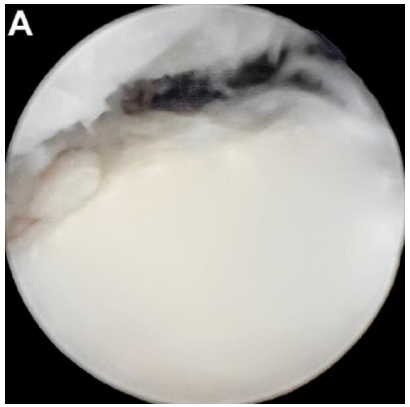
Nothing to disclose

Subtalar Joint Arthroscopy

- Posterior approach
- Anterolateral approach（Sinus Tarsi）

Posterior

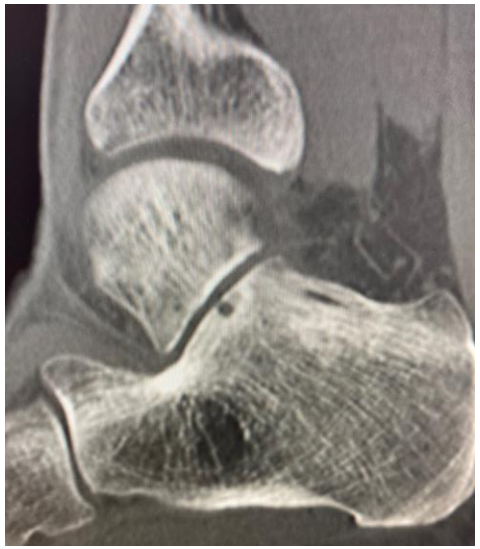
Anterolateral



Shimozono Y, et al. Cartilage 2024
Buck TMF, ete al. Cartilage 2024

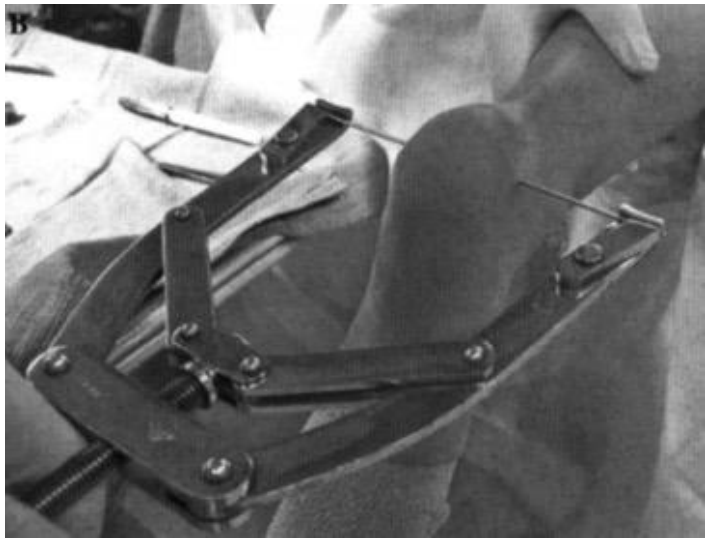
- Sometimes, approaching the intra-articular space can be challenging

Subtalar Arthroscopy for Osteochondral Lesions (OCL)

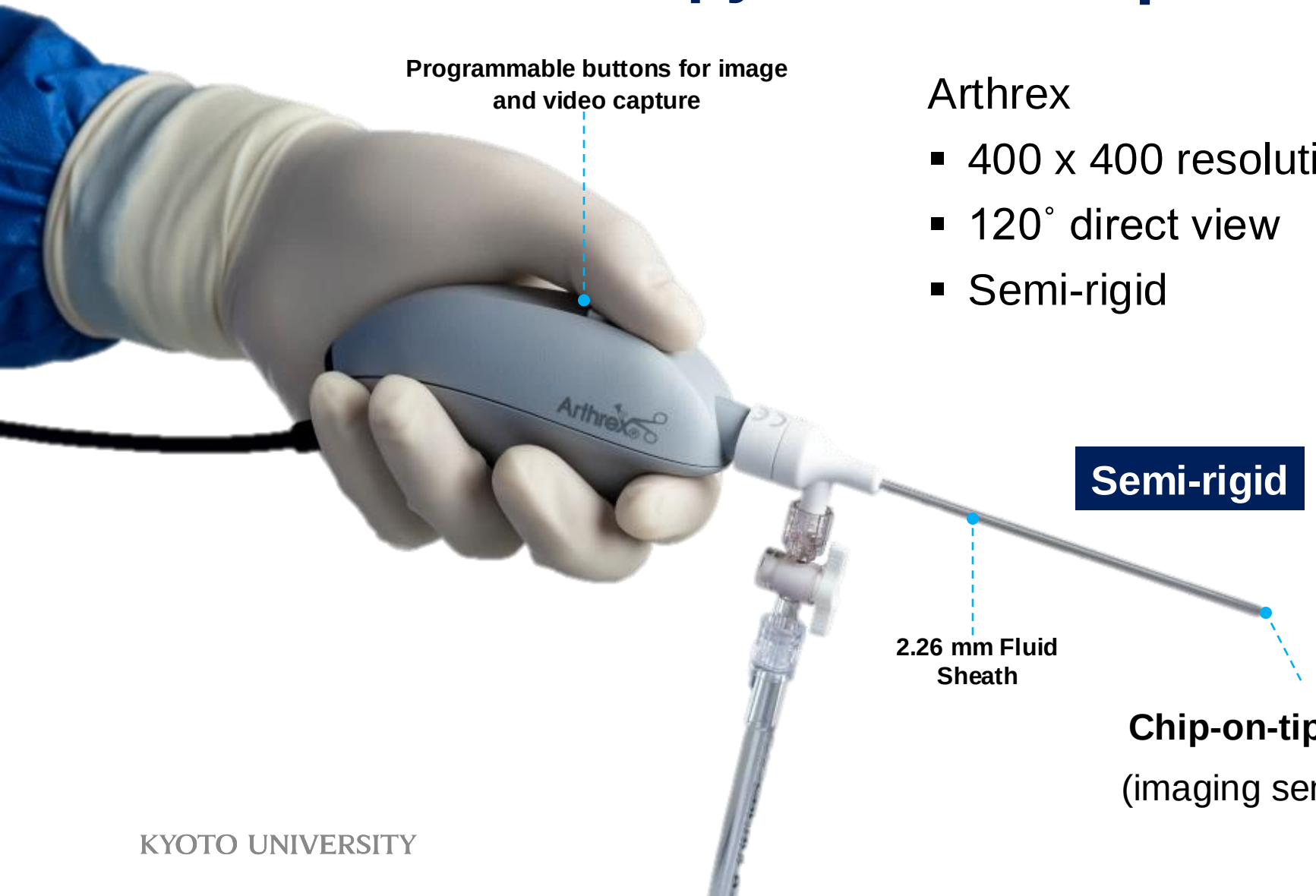


- In some cases, invasive traction equipment is required to approach the joint arthroscopically

Shimozono Y, et al. Cartilage 2024
Buck TMF, ete al. Cartilage 2024

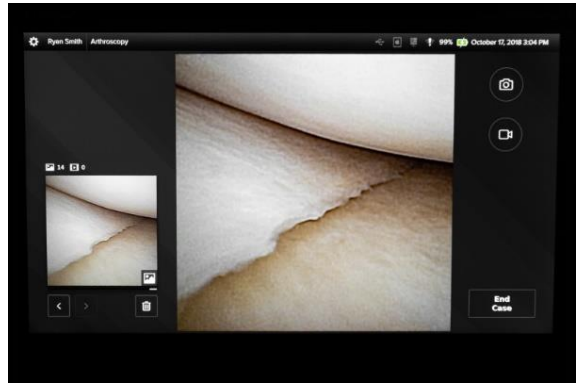


Needle Arthroscopy: NanoScope™



Arthrex

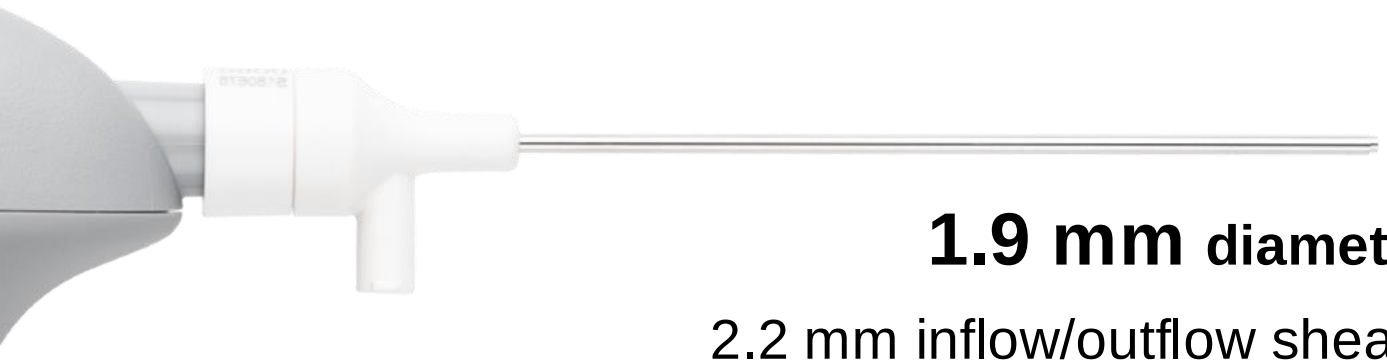
- 400 x 400 resolution
- 120˚ direct view
- Semi-rigid



Chip-on-tip Technology

(imaging sensor at the tip)

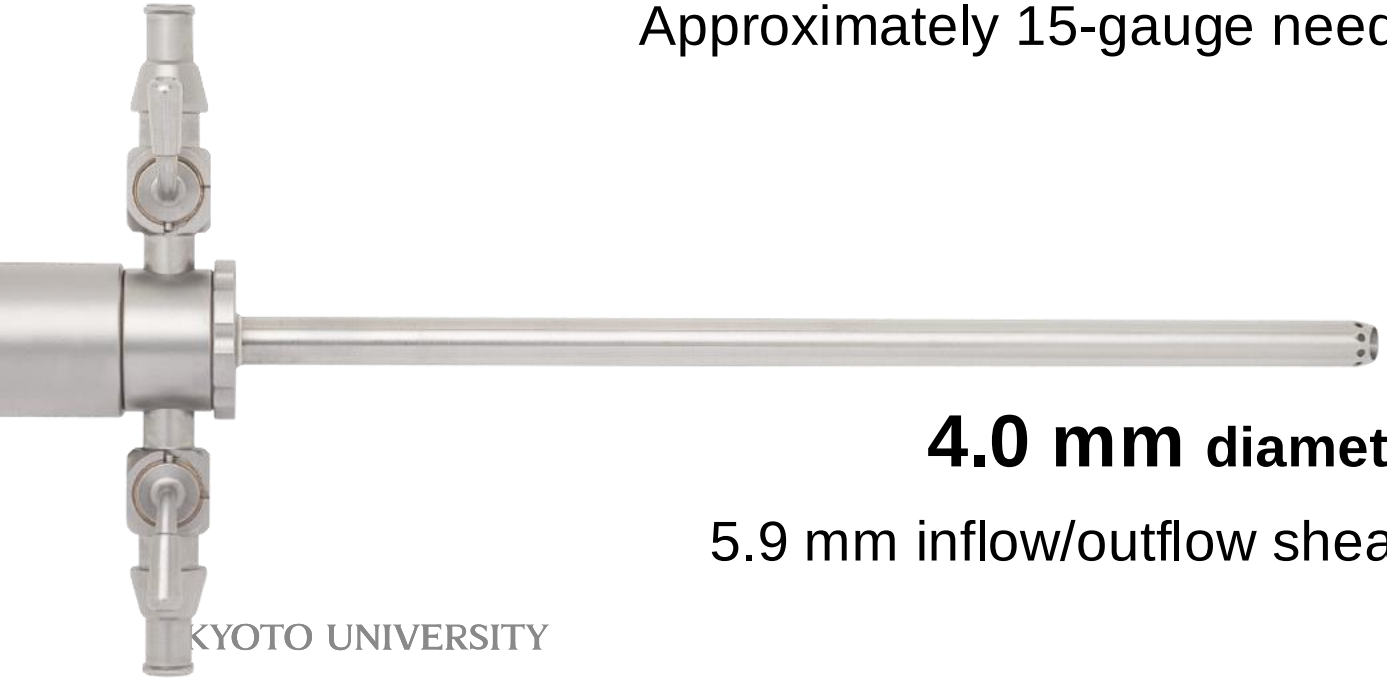
NanoScope Camera



1.9 mm diameter

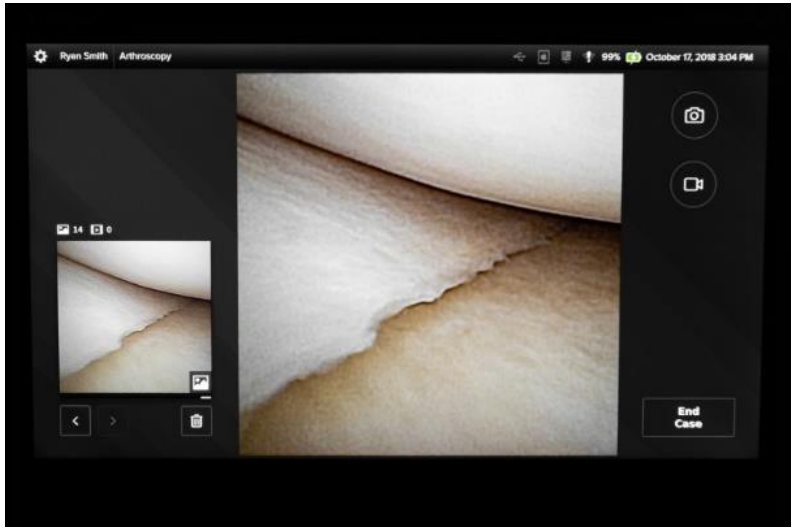
2.2 mm inflow/outflow sheath

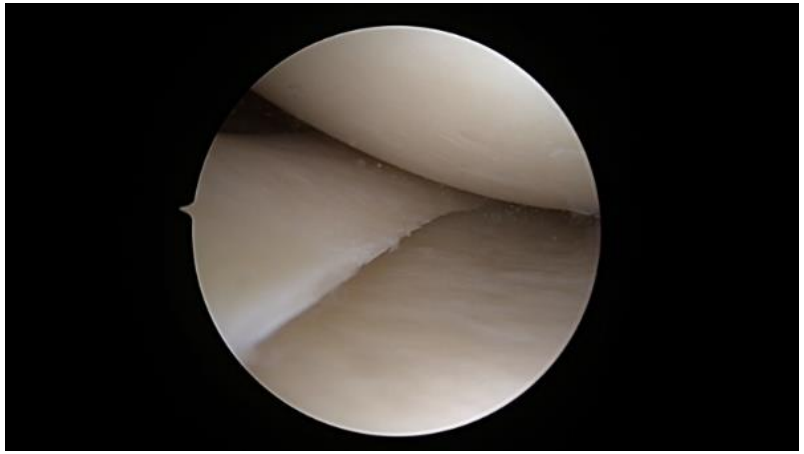
Approximately 15-gauge needle



4.0 mm diameter

5.9 mm inflow/outflow sheath



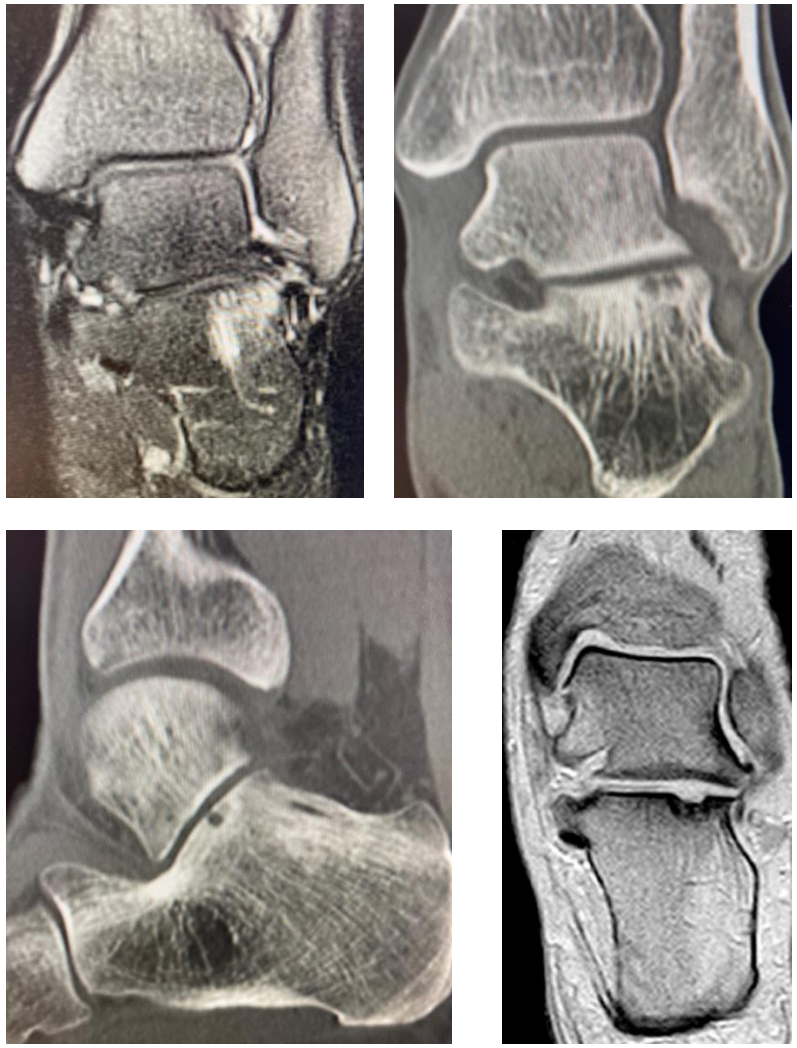


Needle arthroscopy for subtalar OCL

- We present three cases of arthroscopic bone marrow stimulation with platelet-rich plasma (PRP) without invasive distraction using 1.9-mm diameter needle arthroscopy (NanoScope™) for subtalar joint OCLs

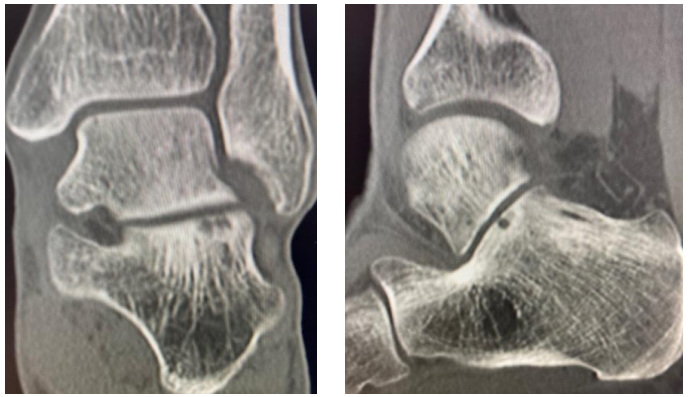
NanoScope for Subtalar OCL

- 3 cases (3 feet)
- Mean age: 35 years（29, 37, 40）
- All OCL were on the calcaneal side of the posterior facet
- Arthroscopic visualization via anterolateral portal using NanoScope and bone marrow stimulation performed via central portal. For cases with cysts, cancellous bone was harvested from the calcaneus and grafted.
- PRP injection into the subtalar joint 3 days after surgery
- No traction device. Only manual inversion stress was performed to approach the OCL



Case: 37 yo male

Manual inversion stress only

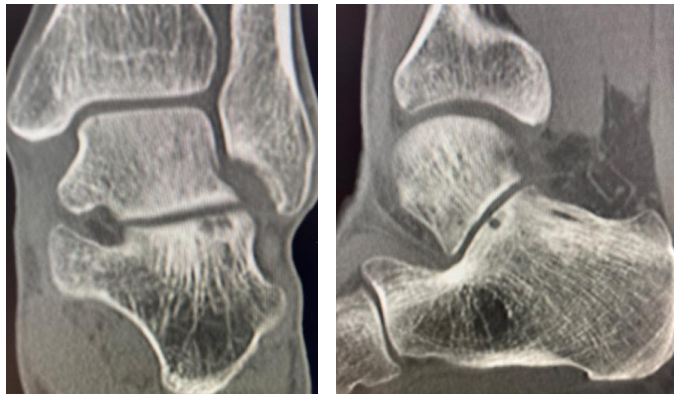


OCL

debridement

Case: 37 yo male

Manual inversion stress only



Microfracture
(Bone marrow stimulation)

Cancellous bone grafting

Outcomes

- All 3 cases were treated with NanoScope using only manual inversion stress
- Mean Follow-up: 22 months (15 – 27)
- Mean JSSF scale : Pre-op 70.3 → Post-op 96.7
- Mean VAS： Pre-op 5.7 → Post-op 0.3
- All 3 patients were able to return to sports (triathlon, running, tennis)
- No complications

Conclusions

- Although limited to three cases, arthroscopic surgery using 1.9-mm needle arthroscopy for subtalar OCL is considered an effective surgical method that does not require invasive traction