



ISAKOS
CONGRESS
2025



MUNICH
GERMANY
June 8-11

Ankle Arthroscopy Combined With Hardware Removal For Chronic Pain After Fracture.

Dimitrios Nikolopoulos, PhD, Athens
George Safos, MD, Athens
Petros Safos, MD, Ikaria
Konstantinos Moustakas, MD, Megara
Spyridon Bonatsos, MD, Athens
Gregory Kyriakopoulos, MD, Ikaria
Dimitrios Kalpaxis, MD, Athens

Central Clinic of Athens, ATHENS, GREECE



Faculty Disclosure Information

- Nothing to disclosure.



ISAKOS
CONGRESS
2025

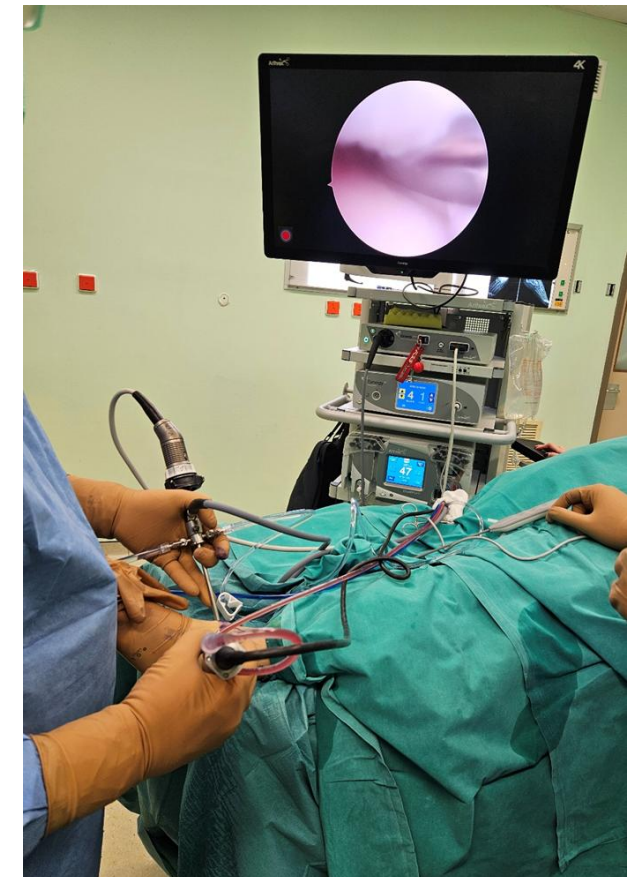


MUNICH
GERMANY
June 8–11

Purpose

The purpose of this prospective study was to **evaluate** the **effectiveness** of **arthroscopy combined** with **hardware removal** for **chronic pain** after satisfactory healing of **ankle fractures**.

We hypothesized that **combining hardware removal with arthroscopy** for the intra-articular pathology would improve residual complaints more versus the hardware removal alone.



ISAKOS
CONGRESS
2025



MUNICH
GERMANY
June 8-11

Methods

The last **12 years**, the outcomes of **120 patients** (61 female-59 male) of **mean age 37,2y** (Group A) and **33,3y** (Group B), with **chronic pain** after **healed ankle fracture** treated with two different therapeutic plans, by **two** different **Surgeon Groups** were prospectively studied.

In **Group A**, it was performed **hardware removal** with conservative treatment and in **Group B**, **arthroscopic intervention** with **hardware removal**.

Patients were reviewed **pre-**, **6** and **12 months post-operatively** using **ROM**, **VAS**, American Foot and Ankle Society (**AOFAS**) scale and the Foot and Ankle Disability Index (**FADI**).

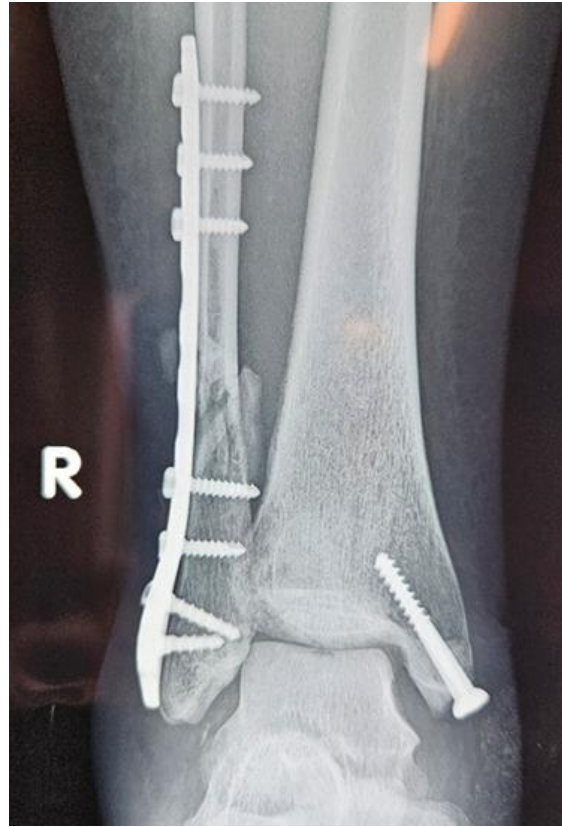


ISAKOS
CONGRESS
2025



MUNICH
GERMANY
June 8–11

Group A - ONLY hardware removal



+ physiotherapy

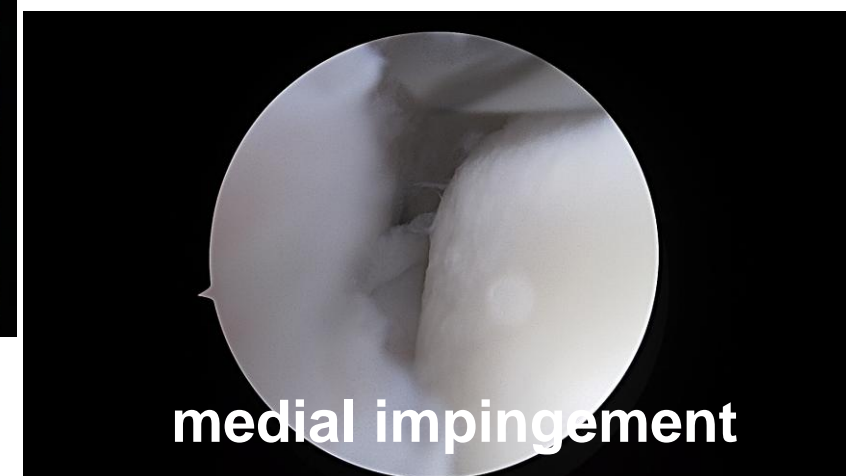
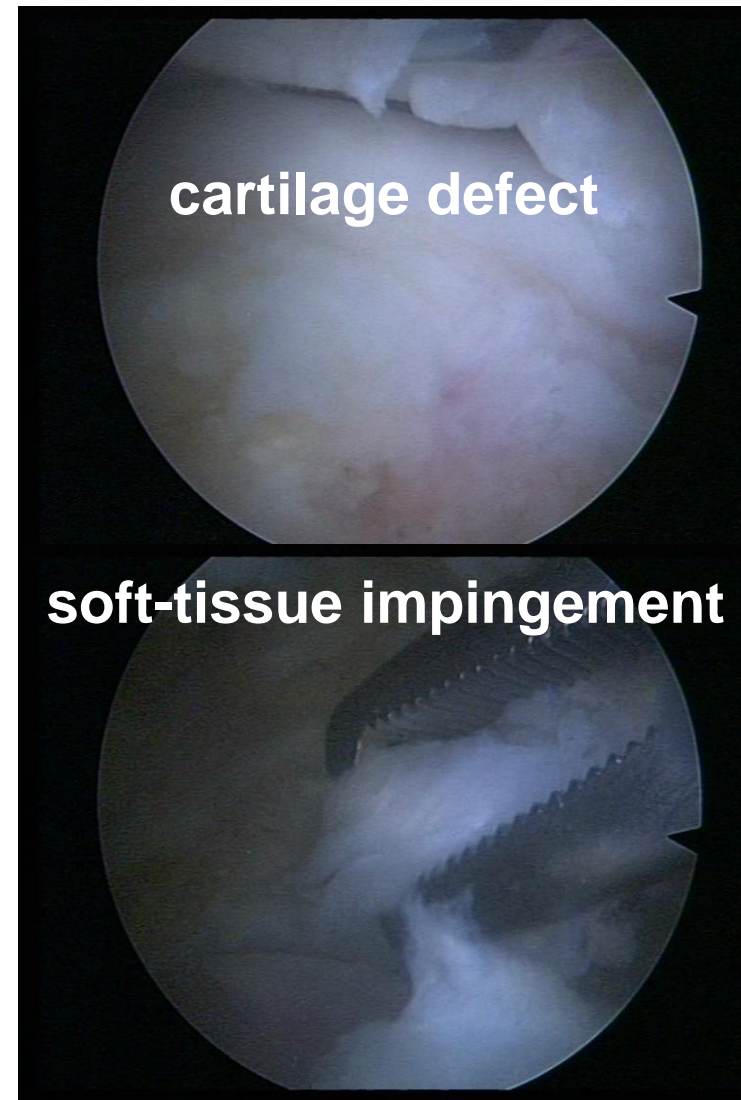
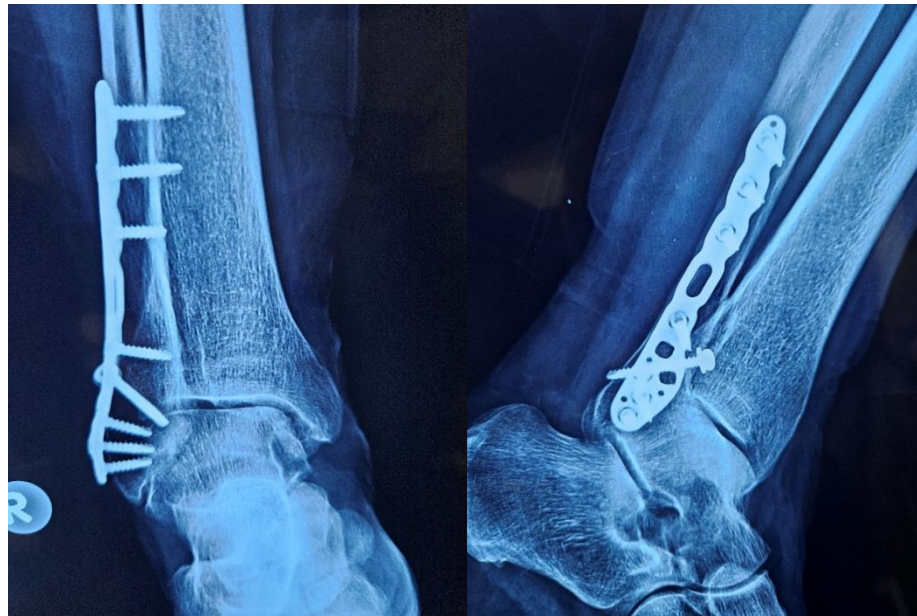


ISAKOS
CONGRESS
2025



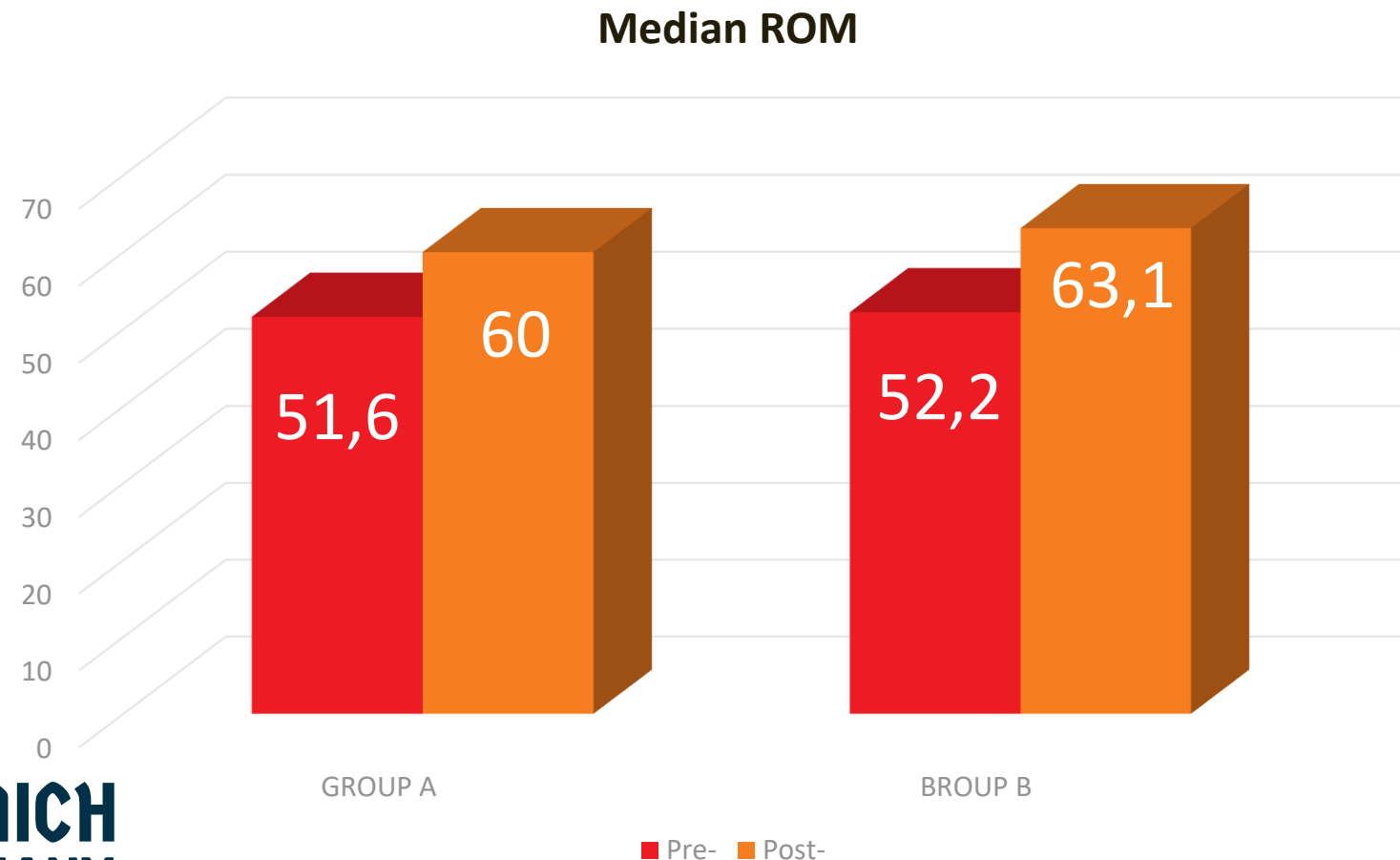
MUNICH
GERMANY
June 8–11

Group B – ARTHROSCOPY + hardware removal



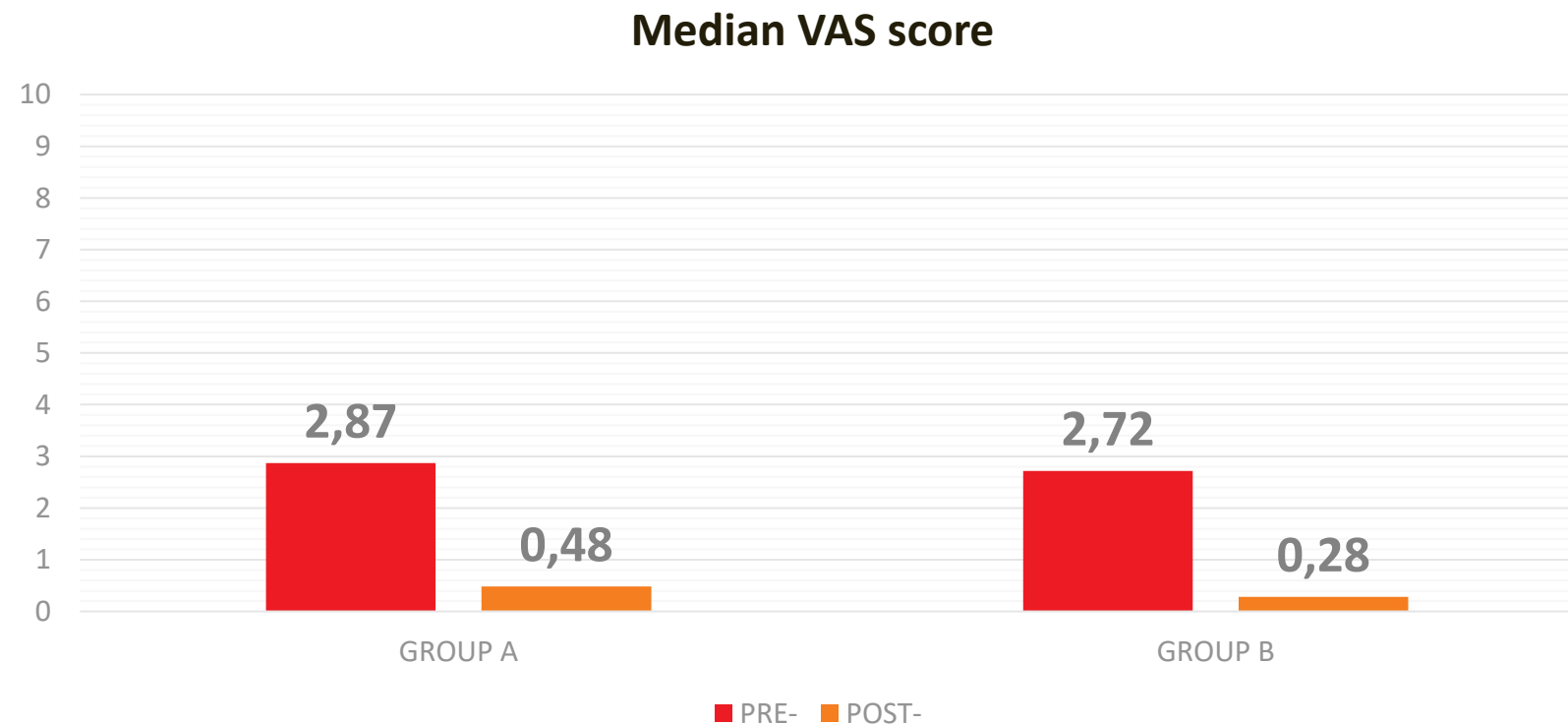
Results

- **Median ROM improved significant** from 51,6 (45-60) points to 60 (55-65) points in group A; and from 52,2 (45-60) points to 63,1 (55-65) points in group B, and this improvement was significantly higher for patients in group B (MWU test: z-score is -4.83; significant at $p < 0.05$).



Results

- **Median VAS scores improved significant** from 2,87 (2-4) points to 0,48 (0-1) points in group A and from 2,72 (2-4) points to 0,28 (0-1) points in group B, and this improvement was not significant between two groups (MWU test: z-score 1.89 / not significant at $p < 0.05$).



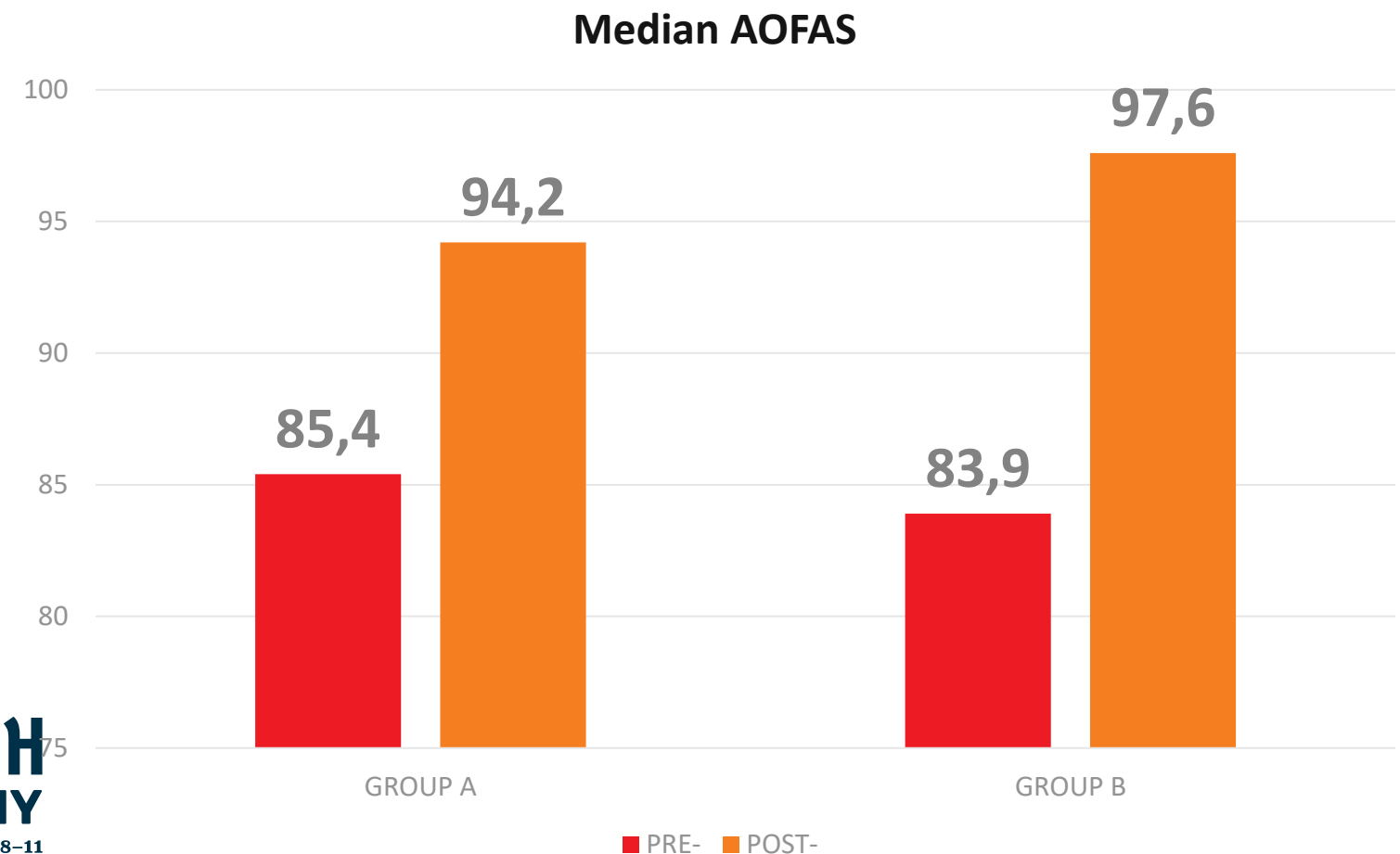
ISAKOS
CONGRESS
2025



MUNICH
GERMANY
June 8-11

Results

- **Median AOFAS** scores **improved significantly** from 85,4 (77-95) points to 94,2 (83-100) points in group A and from 83,9 (77-91) points to 97,6 (94-100) points in group B, and this improvement was significantly higher for patients in group B (MWU test: z-score -4.47; significant at $p < 0.05$).



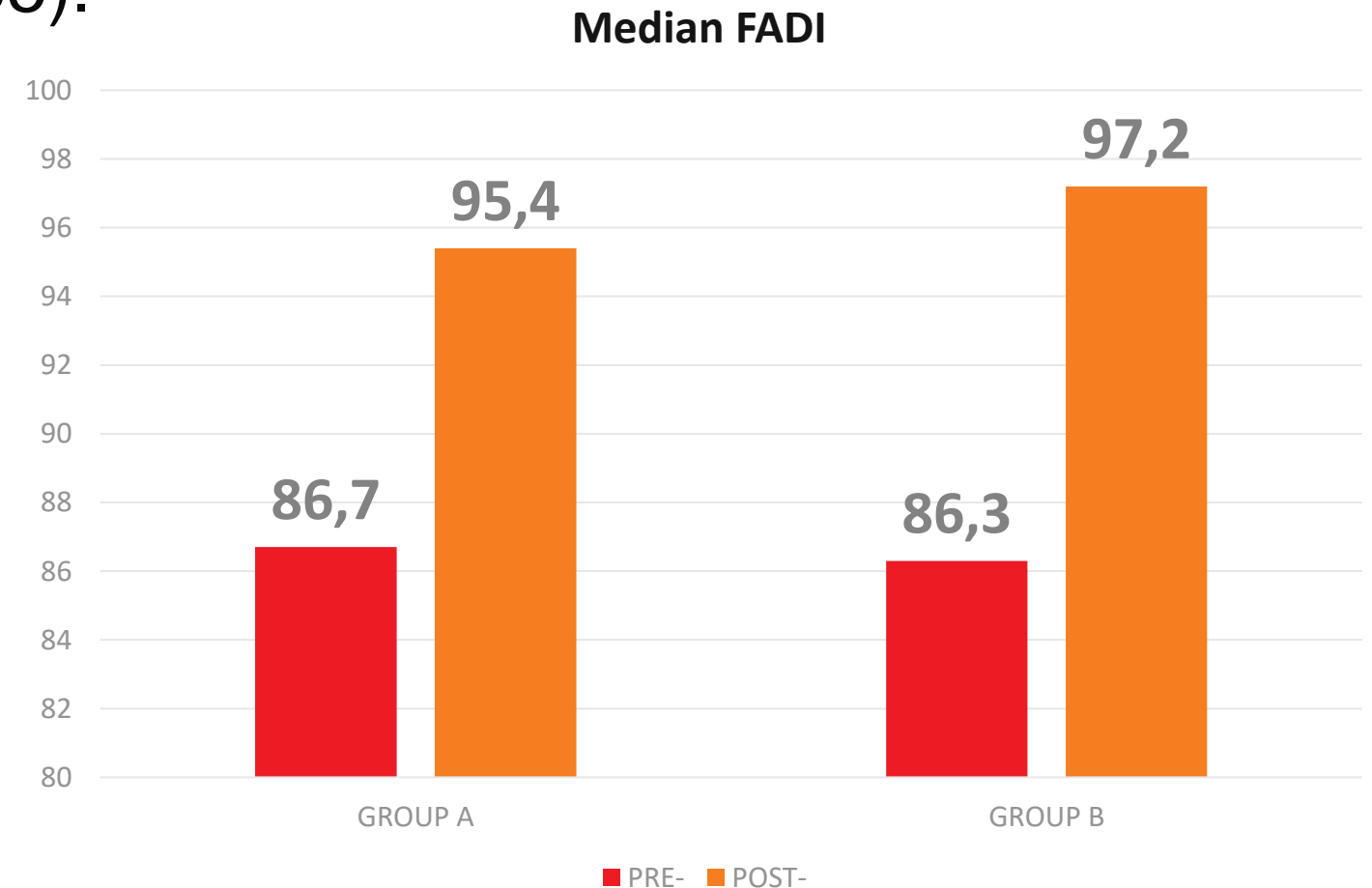
ISAKOS
CONGRESS
2025



MUNICH
GERMANY
June 8-11

Results

- Median FADI scores improved significantly from 86,7 (76,9-90,4) points to 95,4 (91,3-99) points in group A and from 86,3 (76,9-90,4) points to 97,2 (91,3-100) points in group B, and this improvement was also significantly higher for patients in group B (MWU test: z-score - 4.47; significant at $p < 0.05$).



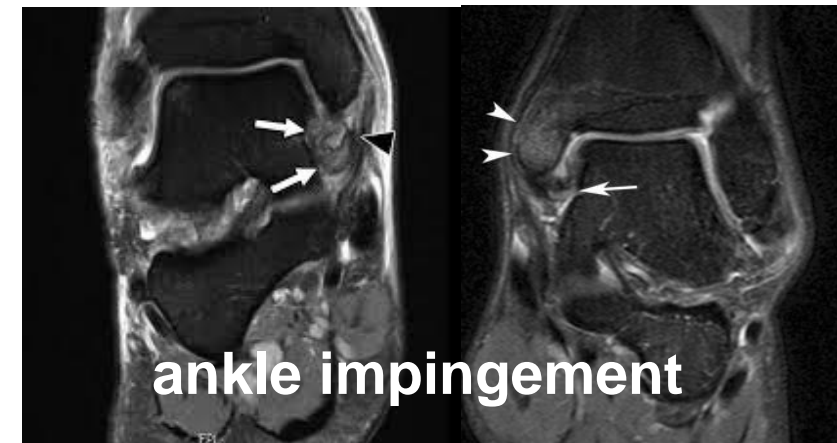
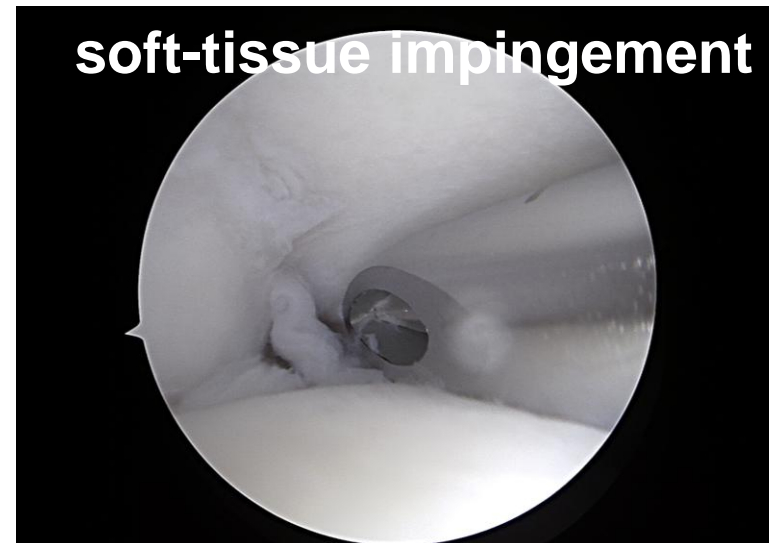
ISAKOS
CONGRESS
2025



MUNICH
GERMANY
June 8-11

Conclusions

This study supports the conception that when there is a definite diagnosis such as **loose body**, **bony impingement**, **cartilage defect** or **anterolateral or anteromedial soft-tissue impingement** causing chronic pain after healed ankle fracture, arthroscopic treatment with hardware removal is a **better** treatment option than hardware removal and conservative treatment.



ISAKOS
CONGRESS
2025



MUNICH
GERMANY
June 8-11

REFERENCES

- van Dijk CN, Verhagen RA, Tol JL. Arthroscopy for problems after ankle fracture. J Bone Joint Surg Br. 1997; 79(2):280-4.
- Hyong-Nyun Kim, Yoo-Jung Park, Gab-Lae Kim, Yong-Wook Park. Arthroscopy combined with hardware removal for chronic pain after ankle fracture. Knee Surg Sports Traumatol Arthrosc 2013;21(6):1427-33.
- Duramaz A, Baca E. Microfracture provides better clinical results than debridement in the treatment of acute talar osteochondral lesions using arthroscopic assisted fixation of acute ankle fractures. Knee Surg Sports Traumatol Arthrosc. 2018;26(10):3089-3095.
- Xu-Gang Li, Xiao-Yang Qi, Jiang-Yun Jiang, Xu-Sheng Qiu. Does removal of implants for ankle fractures improve clinical outcomes? Asian J Surg 2021 Jun;44(6):895-896.
- Hong-Geun Jung, Jin-Il Kim, Jae-Yong Park, Jong-Tae Park, Joon-Sang Eom, Dong-Oh Lee. Is Hardware Removal Recommended after Ankle Fracture Repair? Biomed Res Int 2016:2016:5250672.



ISAKOS
CONGRESS
2025



MUNICH
GERMANY
June 8-11