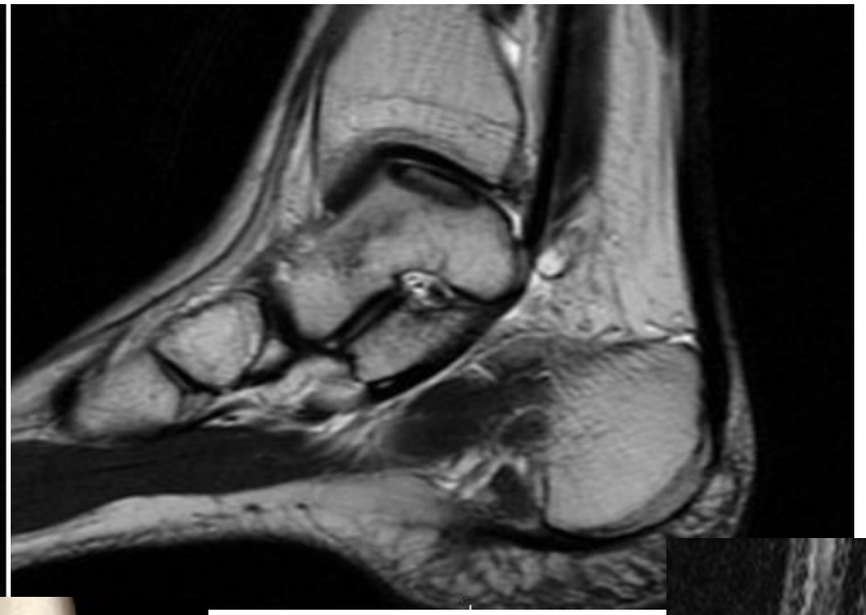
Full Arthroscopic Autologous Matrix-Induced Chondrogenesis for Talus Cartilage Defect

Tomasz Piontek
Paweł Bąkowski
Kinga Ciemniewska-Gorzela

FIFA MEDICAL CENTRE OF EXCELLENCE
PIERWSZY I JEDYNY AKREDYTOWANY OŚRODEK W POLSCE

Arthroscopic AMIC procedur - talus



Arthroscopic AMIC procedur - talus

Preoperative planning

clinical examination of both ankles (range of motion, point tenderness, and alignment of the hindfoot)

Preoperative imaging

weight-bearing radiograph of the foot and ankle

MRI

USG

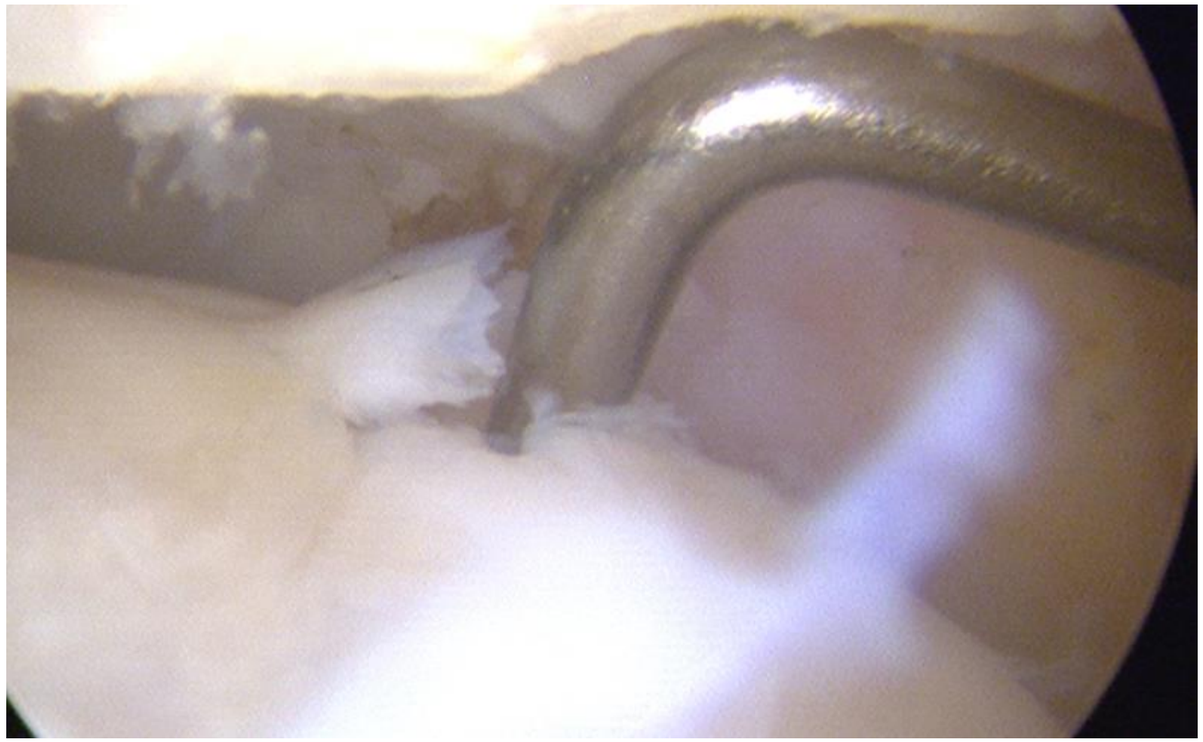
CT

Arthroscopic AMIC procedur - talus

- No-surgical
- Surgical
  - Debridement
  - Microfractures
  - Osteochondral transplantation of autologous graft
  - Allografts
  - ACI & MACI
  - **AMIC**

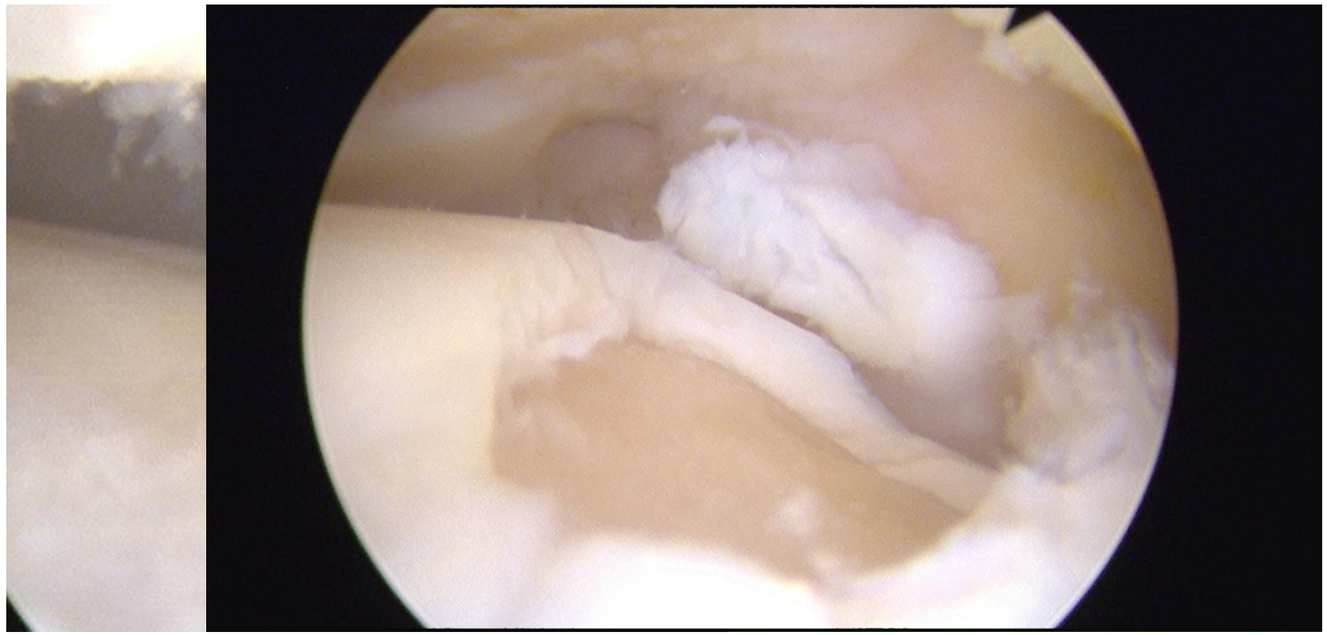
Arthroscopic AMIC procedur - talus

Identification of lesion



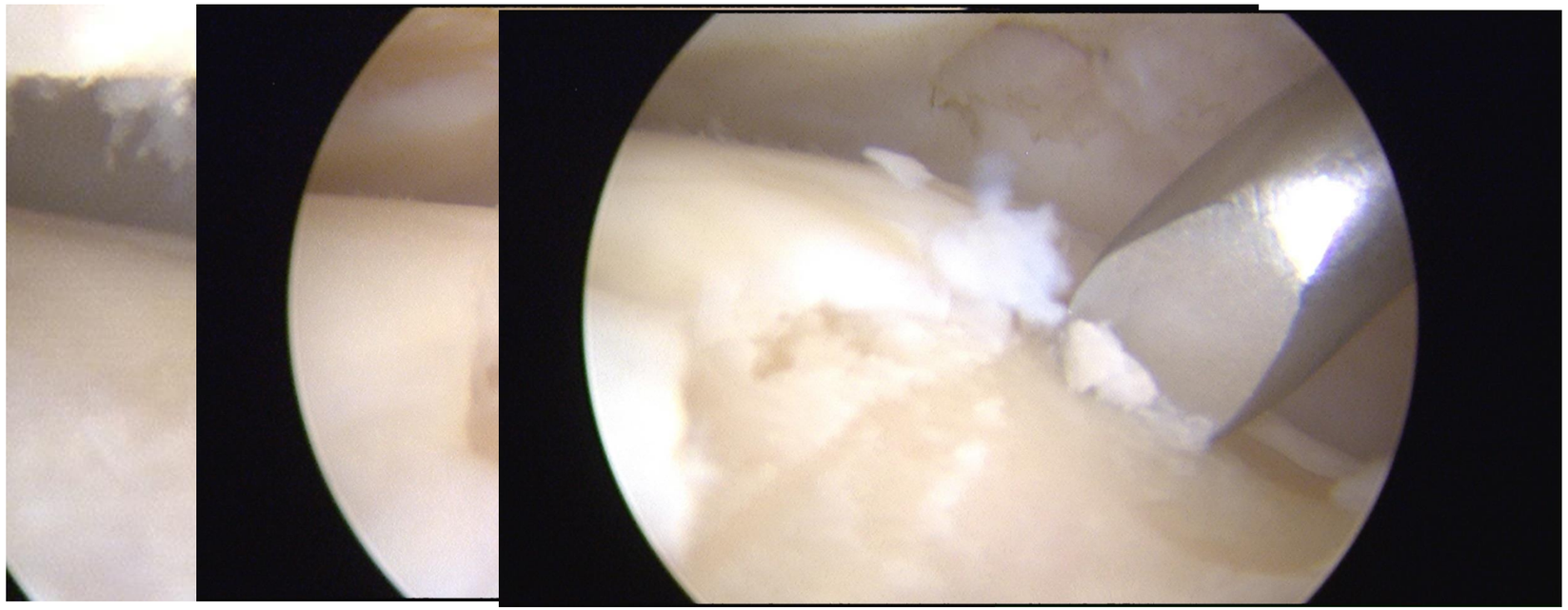
Arthroscopic AMIC procedur - talus

Debridement and shaving of lesion



Arthroscopic AMIC procedur - talus

Microfracture

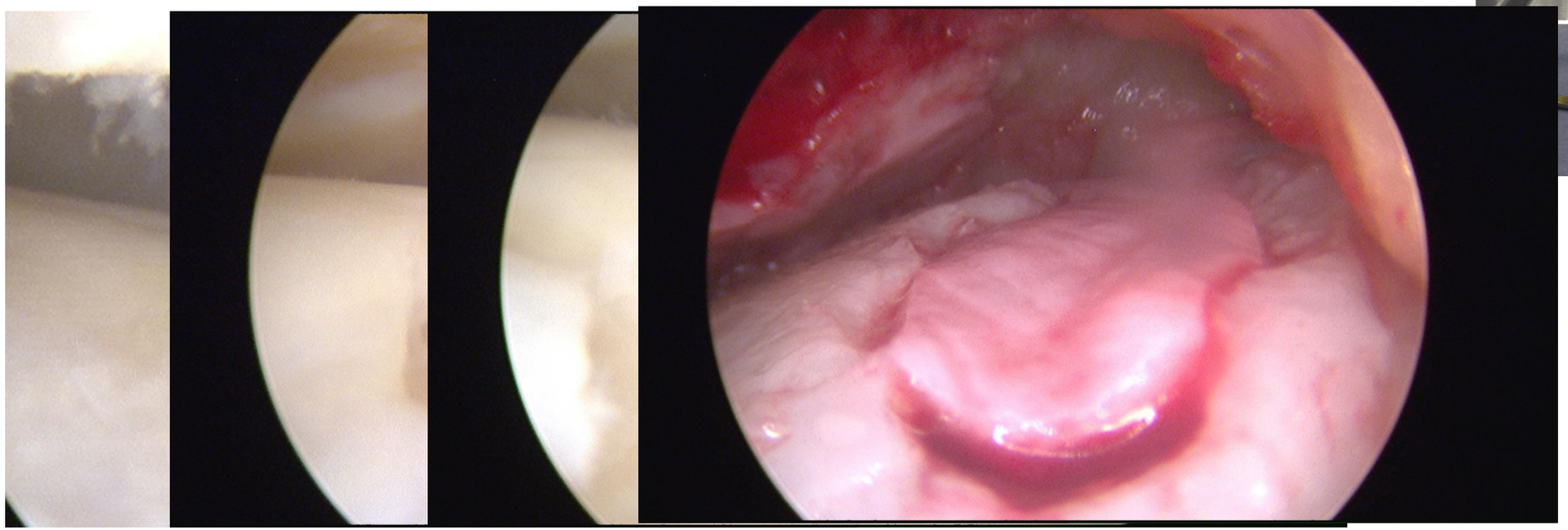


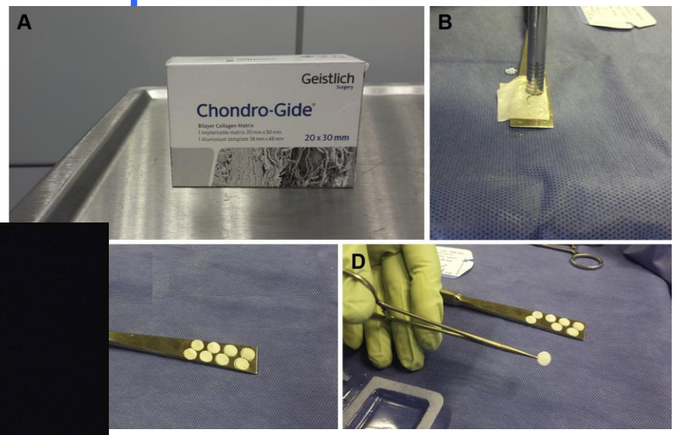
Removal of water and drying of joint space

Arthroscopic AMIC procedur - talus

Preparation of Chondro-Gide matrix using circle shaped knife

Matrix insertion and fixation by fibrin glue

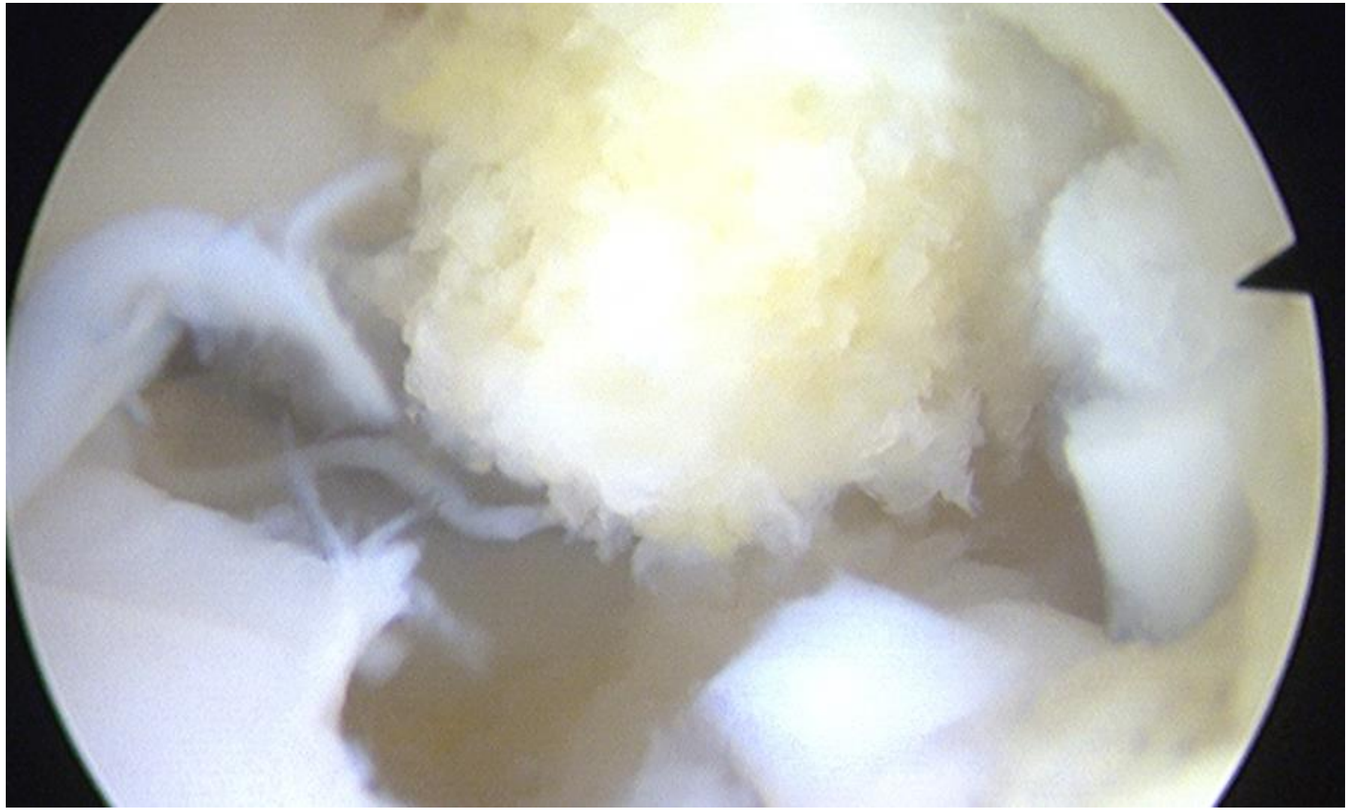




Checking of stability of matrix within normal ankle range of motion

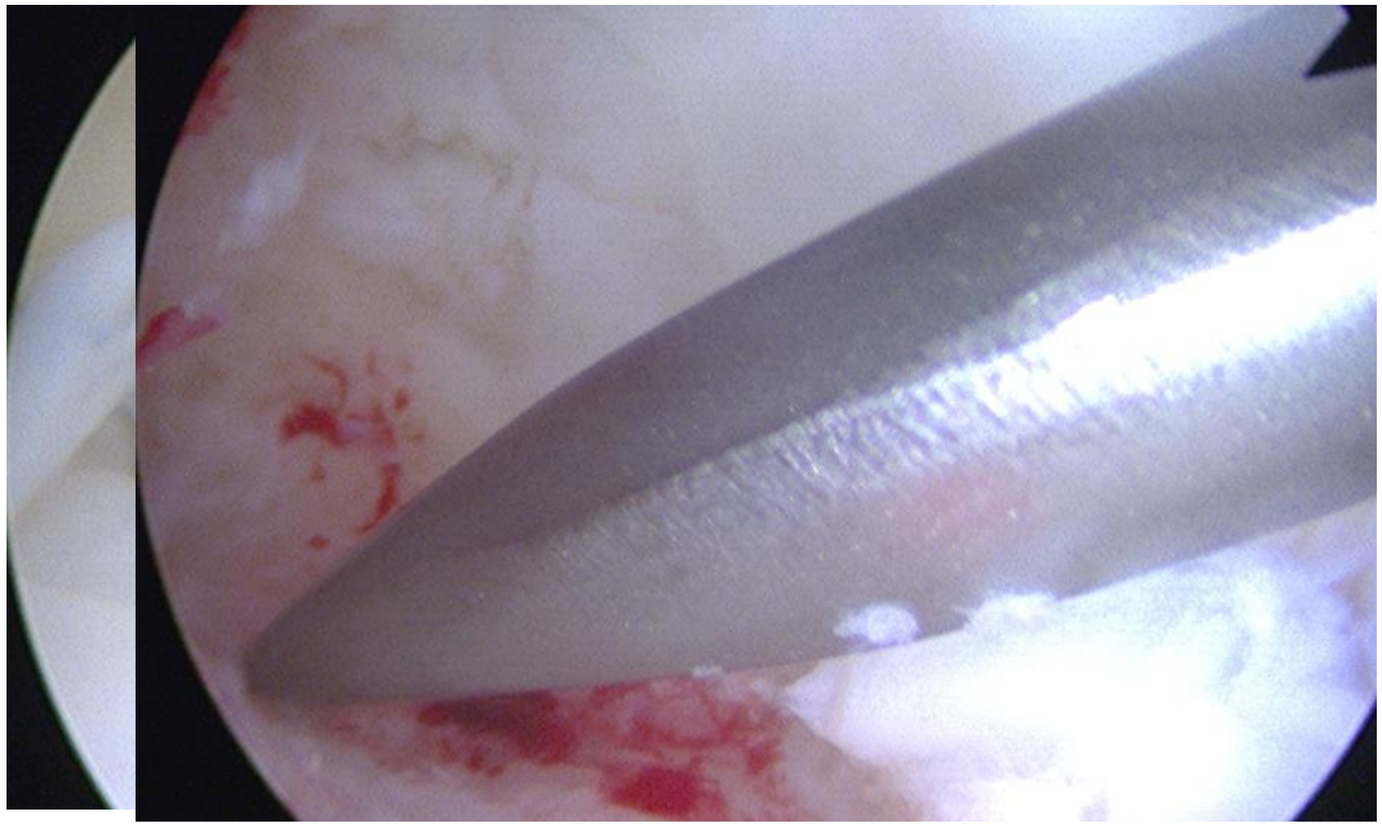
Arthroscopic AMIC procedur - talus

Identification and debridement of lesion



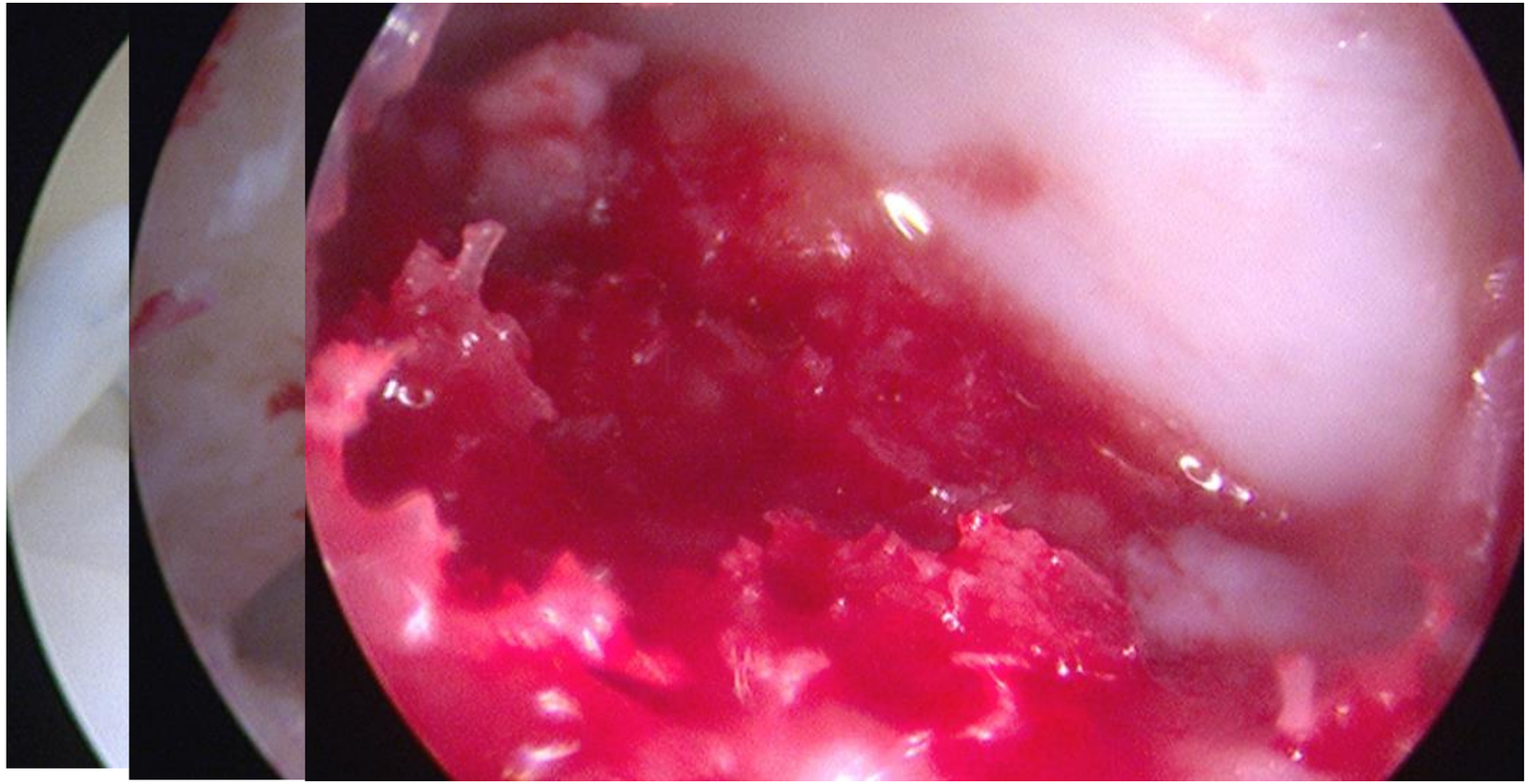
Arthroscopic AMIC procedur - talus

Microfracture



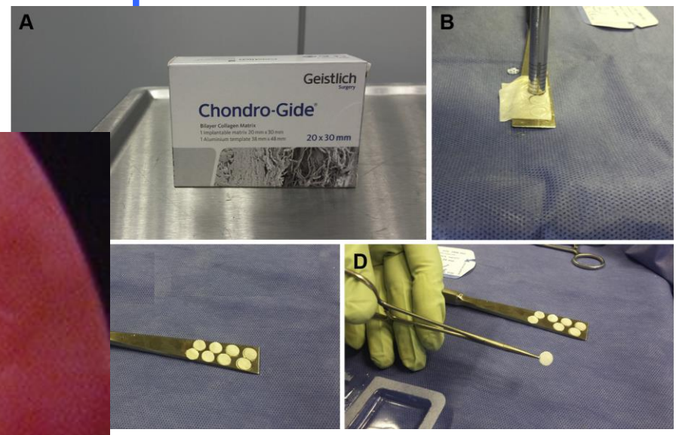
Arthroscopic AMIC procedur - talus

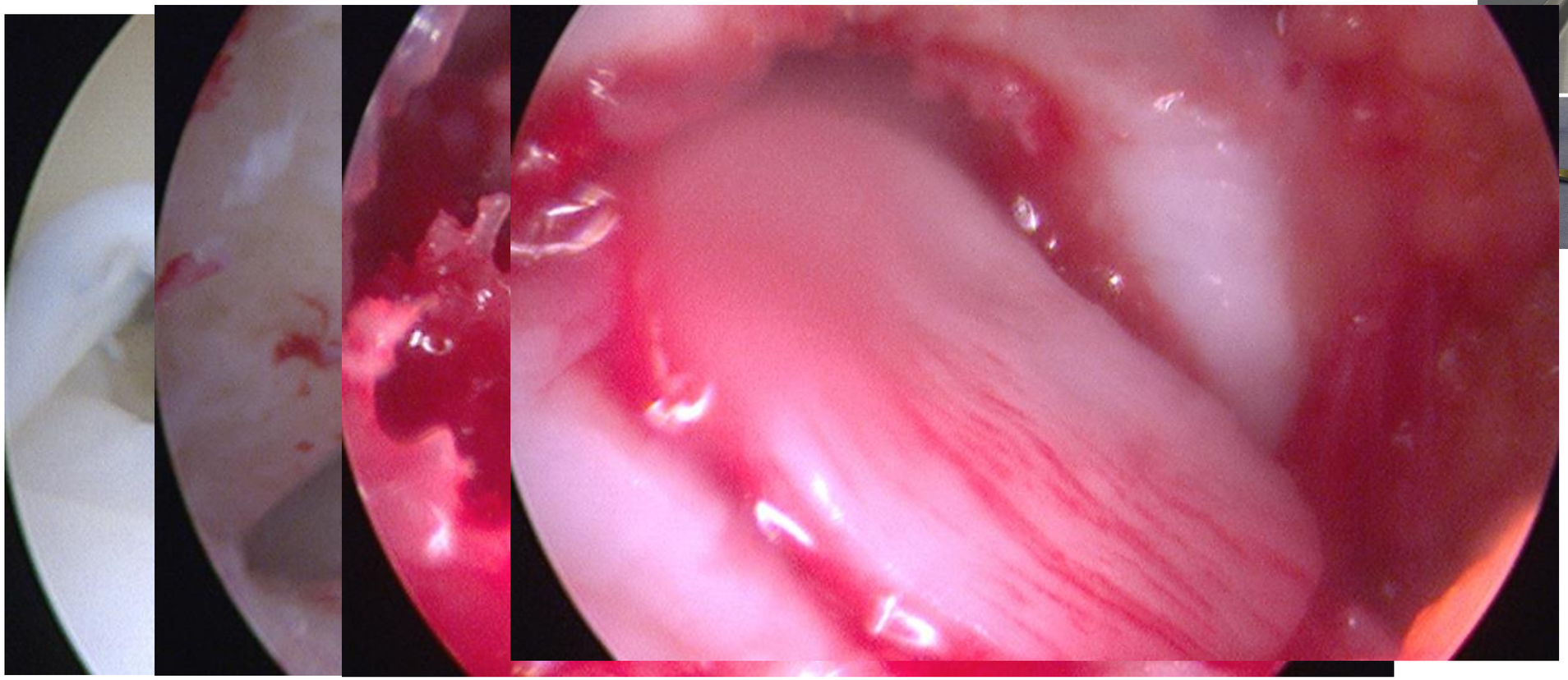
Impaction of bone substitute into bony defect



Arthroscopic AMIC procedur - talus

Preparation of Chondro-Gide matrix using circle shaped knife
Matrix insertion and fixation by fibrin glue





Checking of stability of matrix within normal ankle range of motion

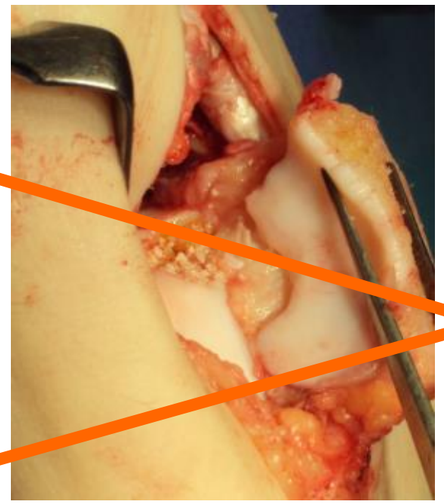
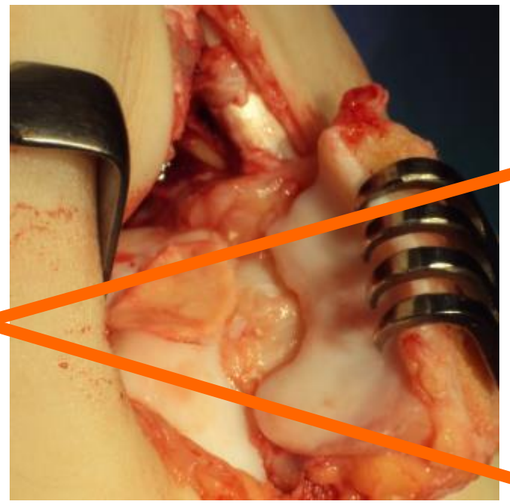
AMIC® Talus:

Postoperative Treatment:

	Post-op to 6 weeks *	6 weeks to 3 months	3 to 6 months	After 6 months
Load bearing	Max. 20 kg	Progressive increase in load bearing to 100%	Full	Full
Mobilisation	Orthesis with 20° restriction Passive → Assistive → Active	No restriction Full range of movement Cartilage therapy	No restriction	No restriction
Physio-therapy & Sport	No Sport Immobilisation Manual lymphatic drainage Electrotherapy	No Sport Physiotherapy	Light sporting activities (e.g. Swimming, cycling)	Full return to sports

Arthroscopic AMIC procedur - talus

We avoid:


Prolonged rehabilitation after standard anteromedial approach with malleolar osteotomy

Arthroscopic AMIC procedur - talus

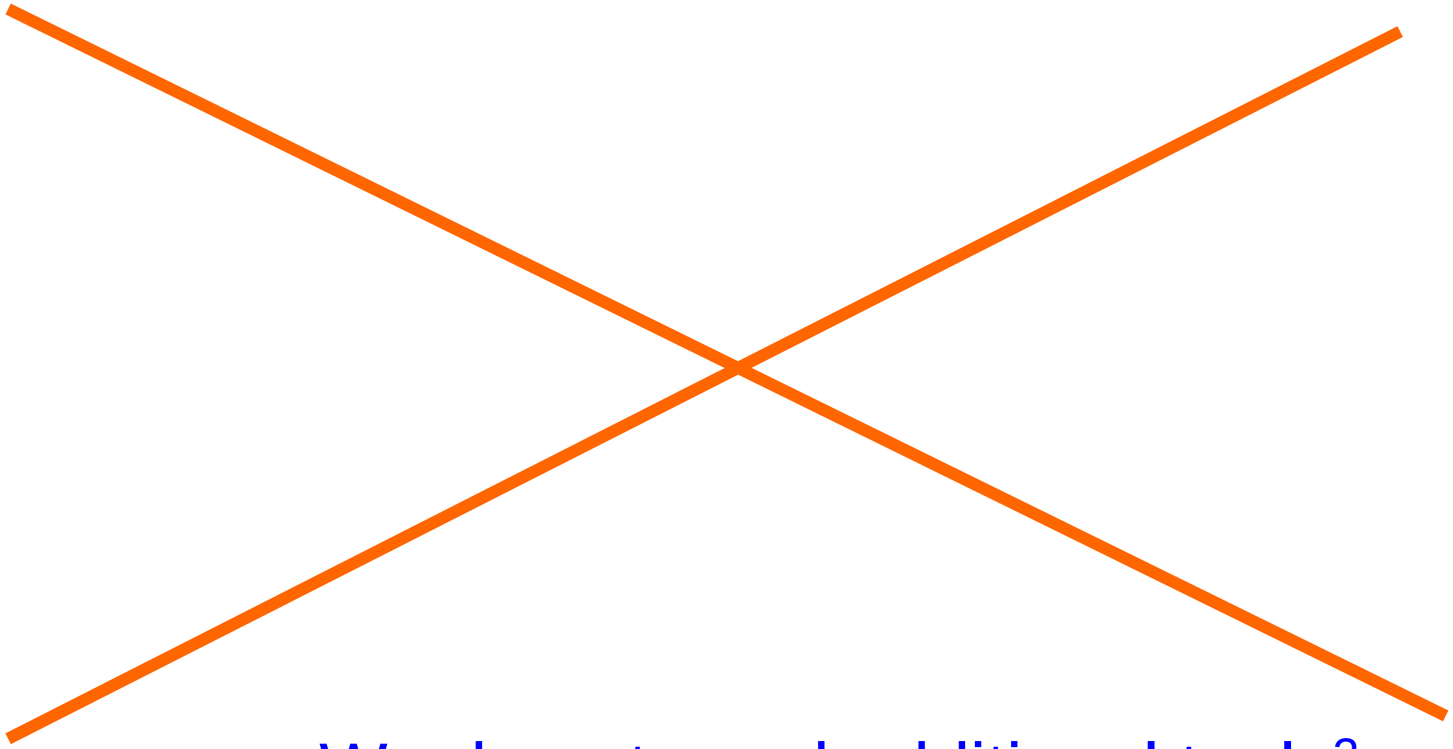
We avoid:

Donor site in a patient’s knee
- autologous chondrocyte implantation (ACI)

1. McCarthy et al. Evaluating Joint Morbidity after Chondral Harvest for Autologous Chondrocyte Implantation (ACI): A Study of ACI-Treated Ankles and Hips with a Knee Chondral Harvest. Cartilage OnlineFirst, published on November 6, 2015 as doi:10.1177/1947603515607963

Arthroscopic AMIC procedur - talus

We avoid:



We do not need additional tools[2]

2. *Usuelli FG*, et al. All-Arthroscopic Autologous Matrix-Induced Chondrogenesis for the Treatment of Osteochondral Lesions of the Talus. Arthrosc Tech. 2015 Jun 8;4(3):e255-9. doi: 10.1016/j.eats.2015.02.010. eCollection 2015

Disadvantage:

The arthroscopic AMIC technique **is not a simple one**,

yet after proper training, it is possible to perform this technique in a few minutes.

Arthroscopic AMIC procedur - talus

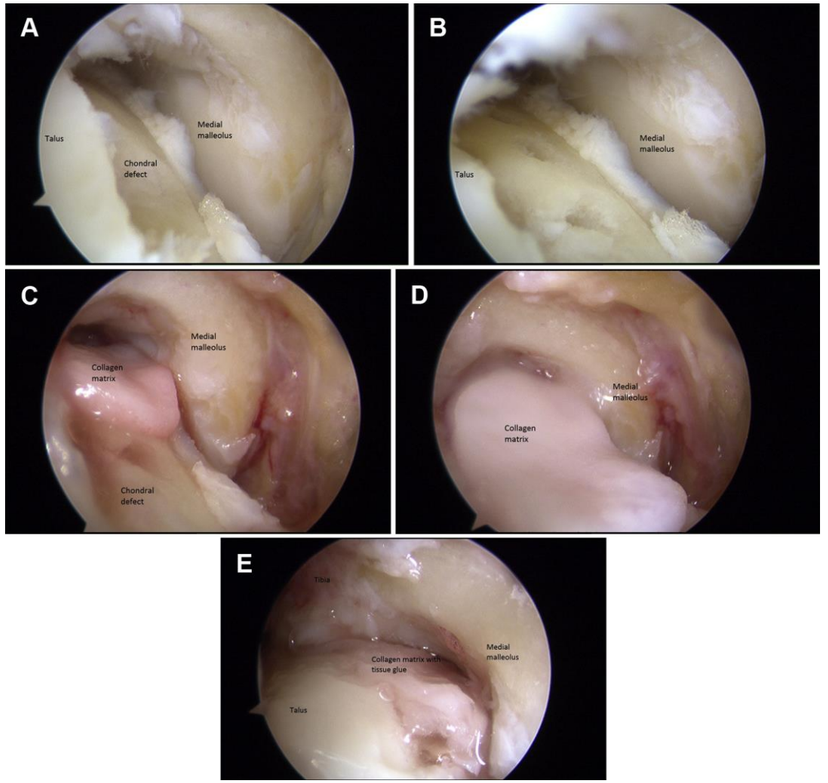
We have operated 20 patients with all arthroscopic AMIC technique.

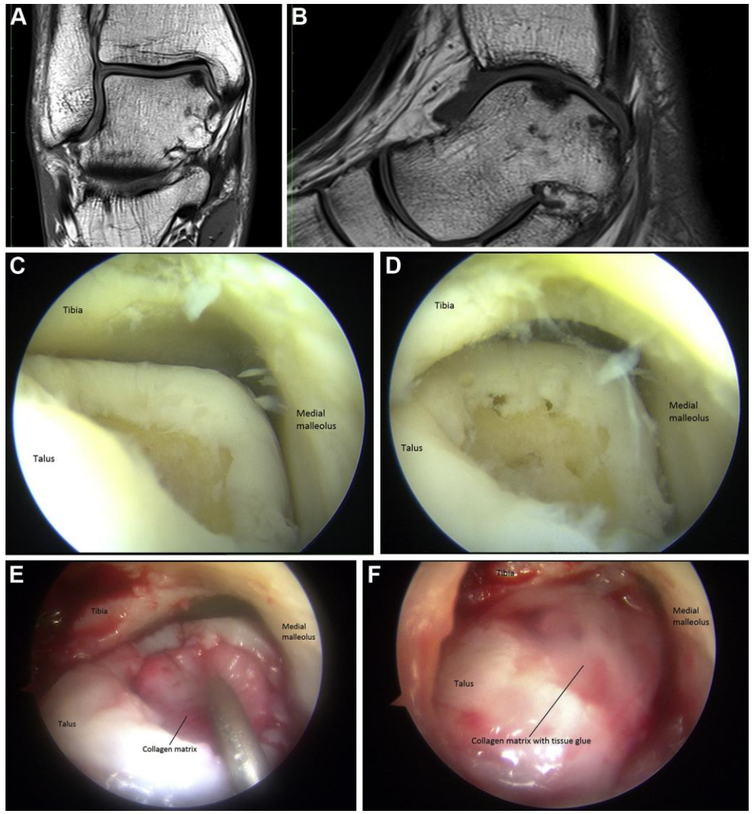
Follow-up – 2 years

Arthroscopic AMIC procedur - talus

Indications:
Grade III and IV chondral defects (ICRS grading)

Defect size >15 mm in diameter
Age <60 yr
Talus and/or tibial lesions





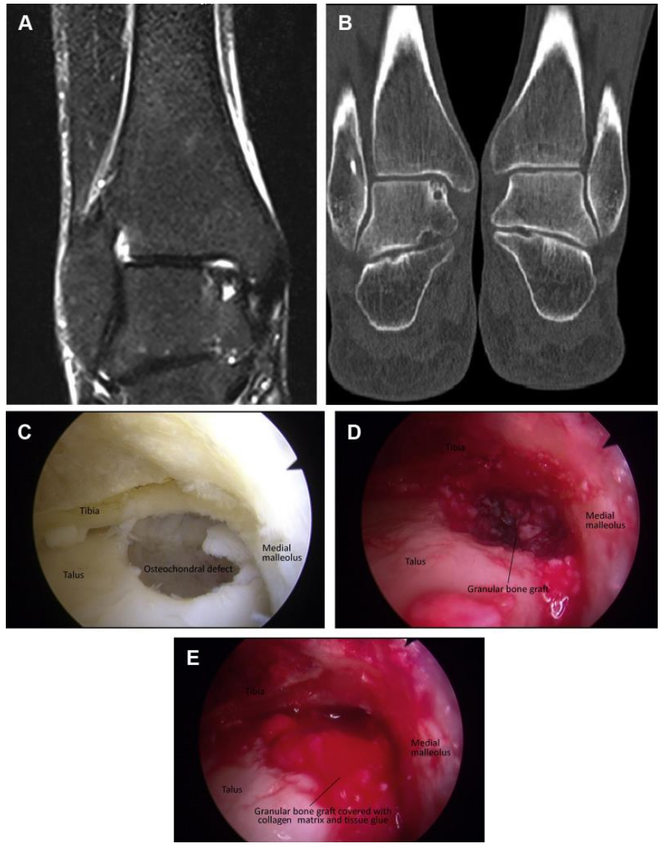
Piontek T, et al. Arthroscopic Treatment of Chondral and Osteochondral Defects in the Ankle Using the Autologous Matrix-Induced Chondrogenesis Technique. Arthroscopy Techniques, Vol,No(Month), 2015: pp e1-e7

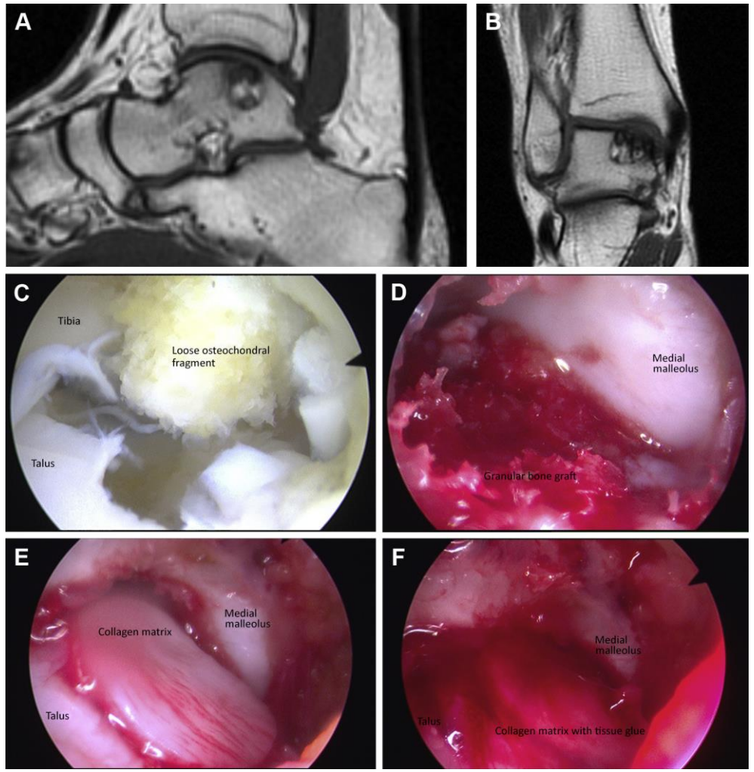
Arthroscopic AMIC procedur - talus

AMIC Procedure in Ankle

Indications:
Osteochondral defects

Defect size >15 mm in diameter
Age <60 yr
Talus and/or tibial lesions





Piontek T, et al. Arthroscopic Treatment of Chondral and Osteochondral Defects in the Ankle Using the Autologous Matrix-Induced Chondrogenesis Technique. Arthroscopy Techniques, Vol,No(Month), 2015: pp e1-e7

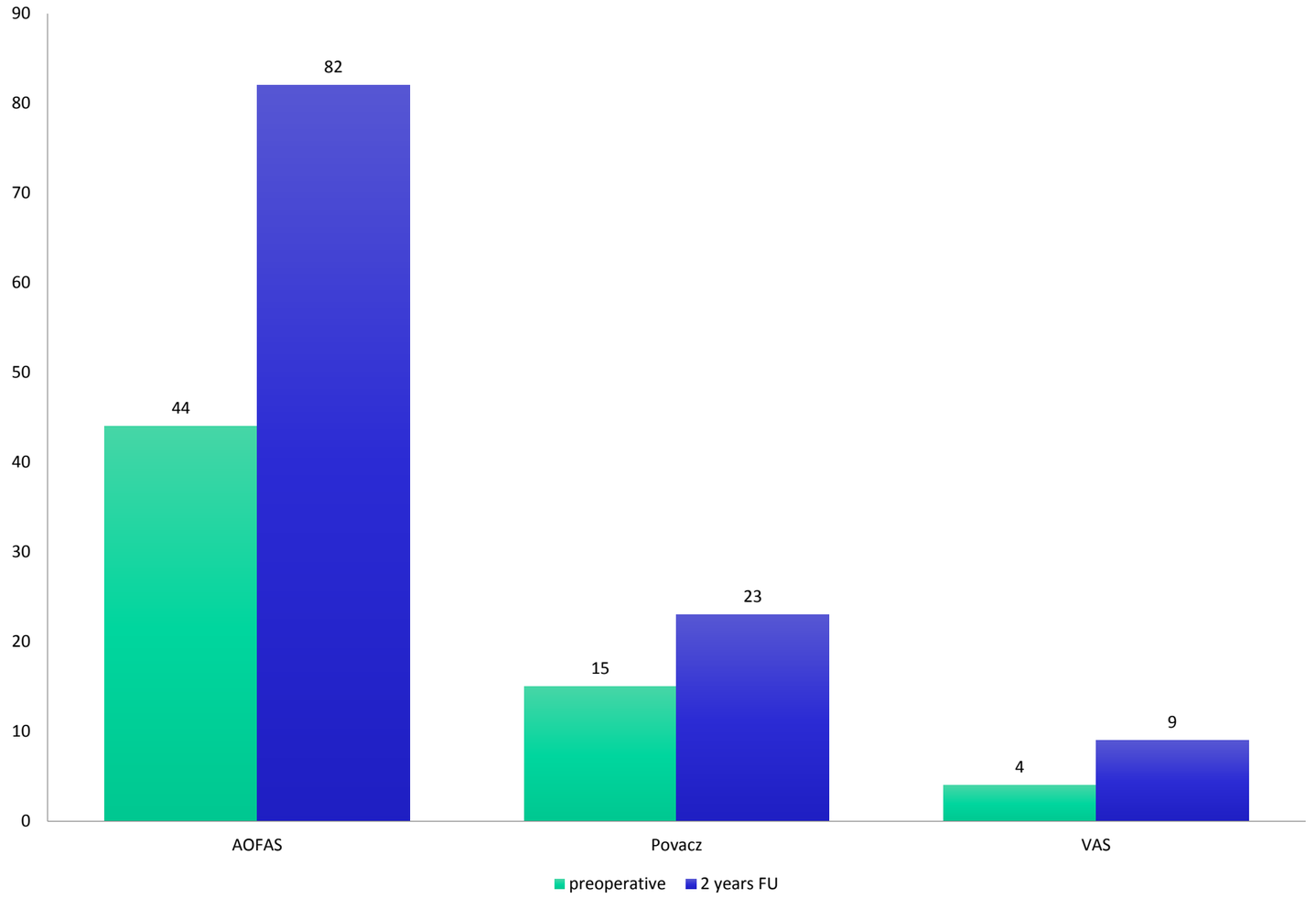
Arthroscopic AMIC procedur - talus

Exclusion criteria

Metabolic arthropathies
Infections
Arthrosis

Arthroscopic AMIC procedur - talus

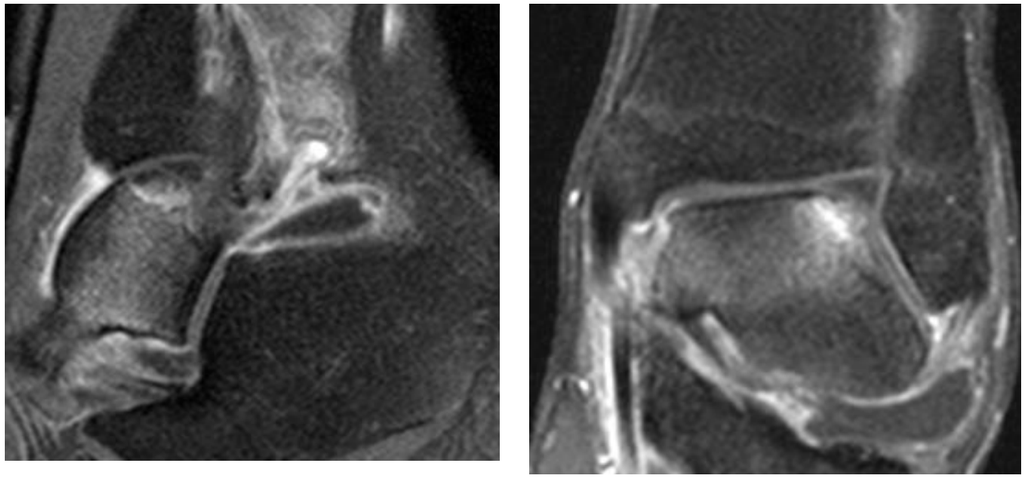
RESULTS: Clinical



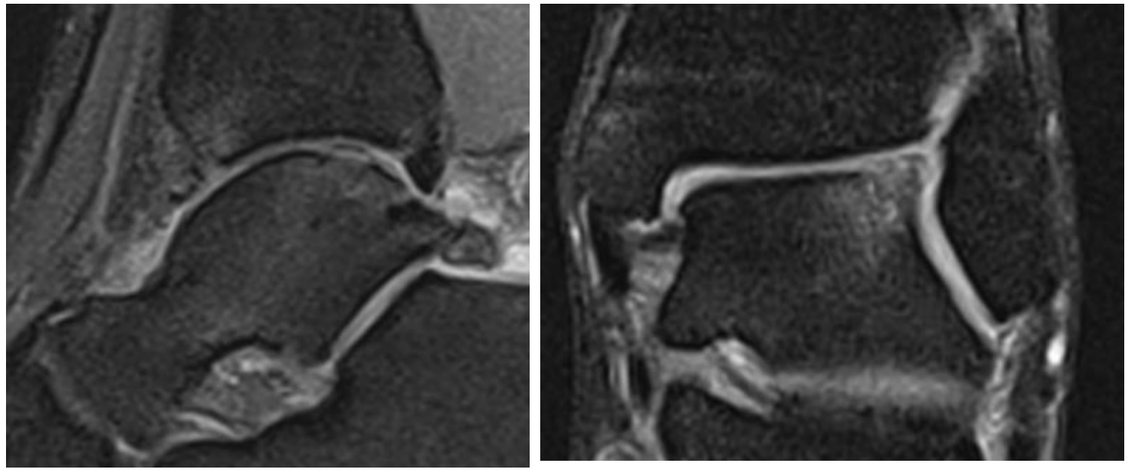
Arthroscopic AMIC procedur - talus

RESULTS:
MRI

preoperative



6 m follow up



Arthroscopic AMIC procedur - talus

CONCLUSION:

We have presented the simplest from existing, entirely arthroscopic technique for reconstructing extensive cartilage lesions with and without bone defects.

The results of treatment are good and promising for future investigations.

Thank you for your attention

Autor: Kinga Ciemniewska-Gorzela