



**The Art of
Precision®**

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PanPlasty[®] System for Treating Knee Bone Marrow Lesions

November 2022

Key Features/Benefits – PanPlasty Knee System



- Custom Translation
 - Precision localization of the lesion using customized translational settings on the PanPlasty instrument
- Two Localizing Probes
 - **Ring probe** for delicate handling of articular surfaces as well as **spike probe** for exposed subchondral bone
- Customized Trocar with Easy Removal Prior to Injection
 - **Trocar uniquely designed** for precise delivery of biomaterials of choice with **swivel lock** for stability during drilling and **easy removal** prior to injection of biomaterials
- Fluoroscopy as Confirmation
 - With the translational customization feature of the instrument system, surgeons can potentially now use fluoroscopy as confirmation rather than localization and confirmation



What is a Bone Marrow Lesion?

- Intraosseous (IO) lesion
- High bone marrow signal T2
- Fluid sensitive
- Fat suppressed
- MRI



Surgical Principles

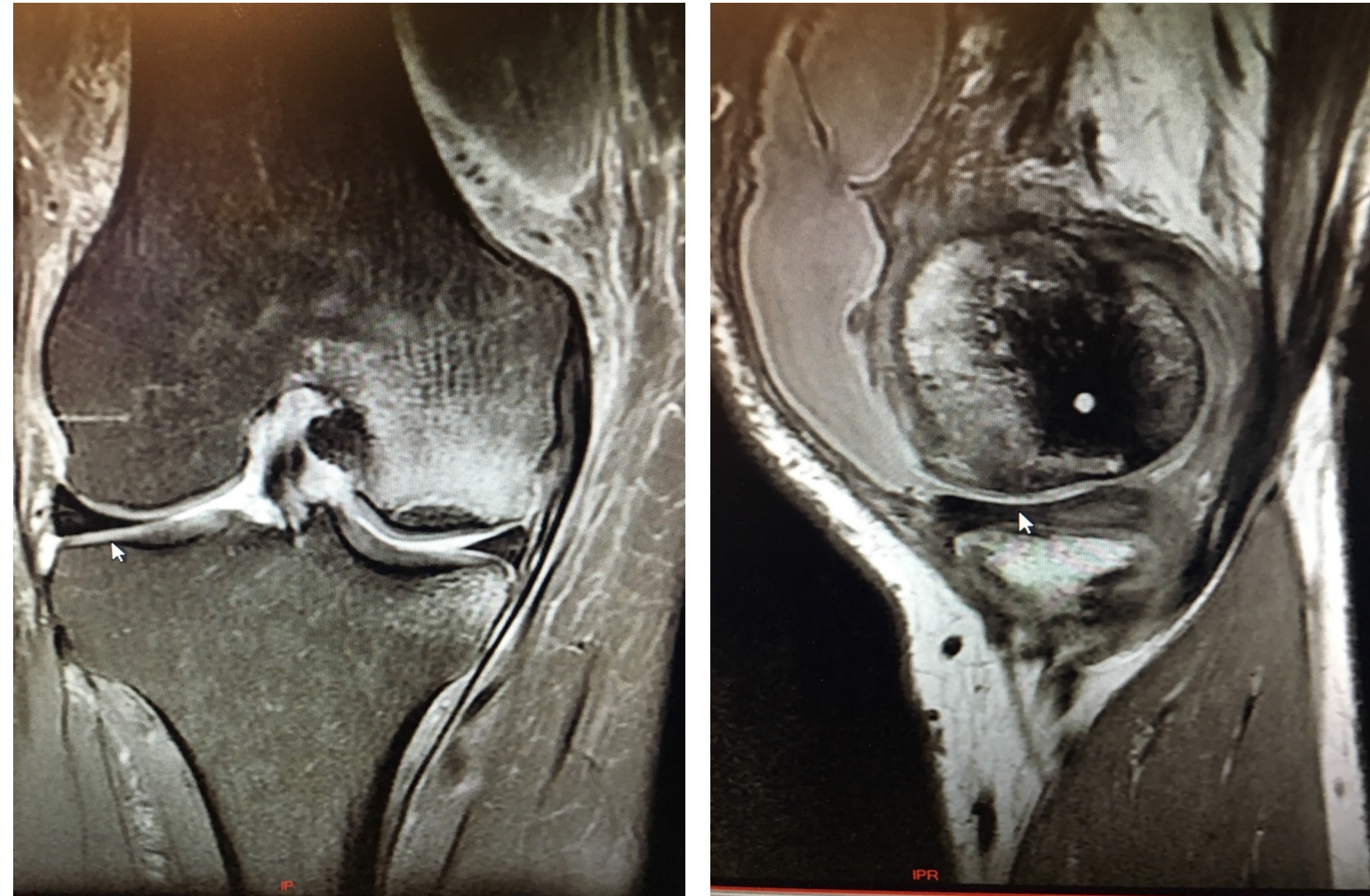


- Localization: *Precise*
- Access
- Delivery
- Confirmation
- *Subchondral Plate Integrity*

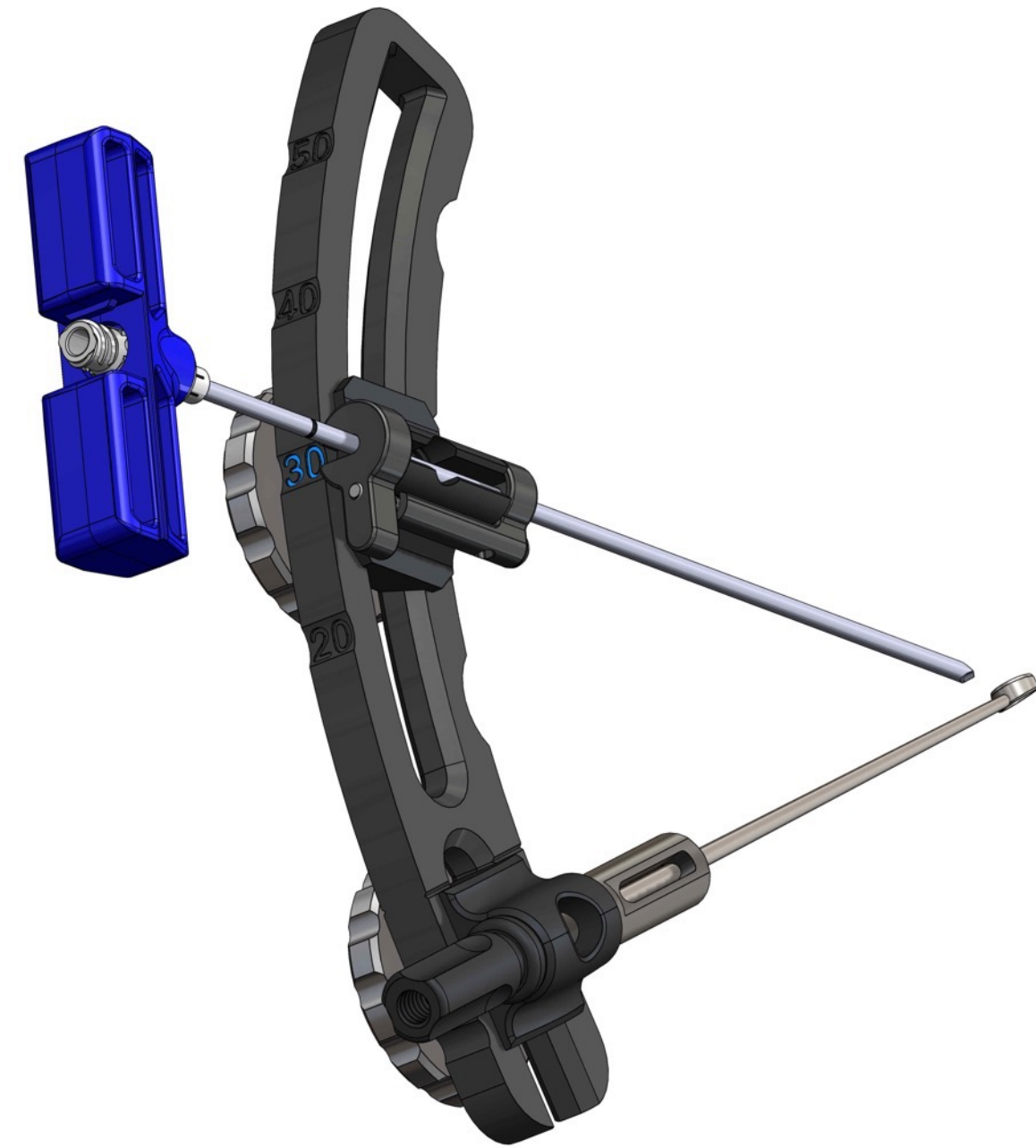
Limitations of Current Methods

- Localization
 - imprecise
 - approximation at best
- Access
 - Free-hand
 - Single point
- Delivery
 - Limited
 - Single-size
- Confirmation - cumbersome

Complications: Imprecise Targeting

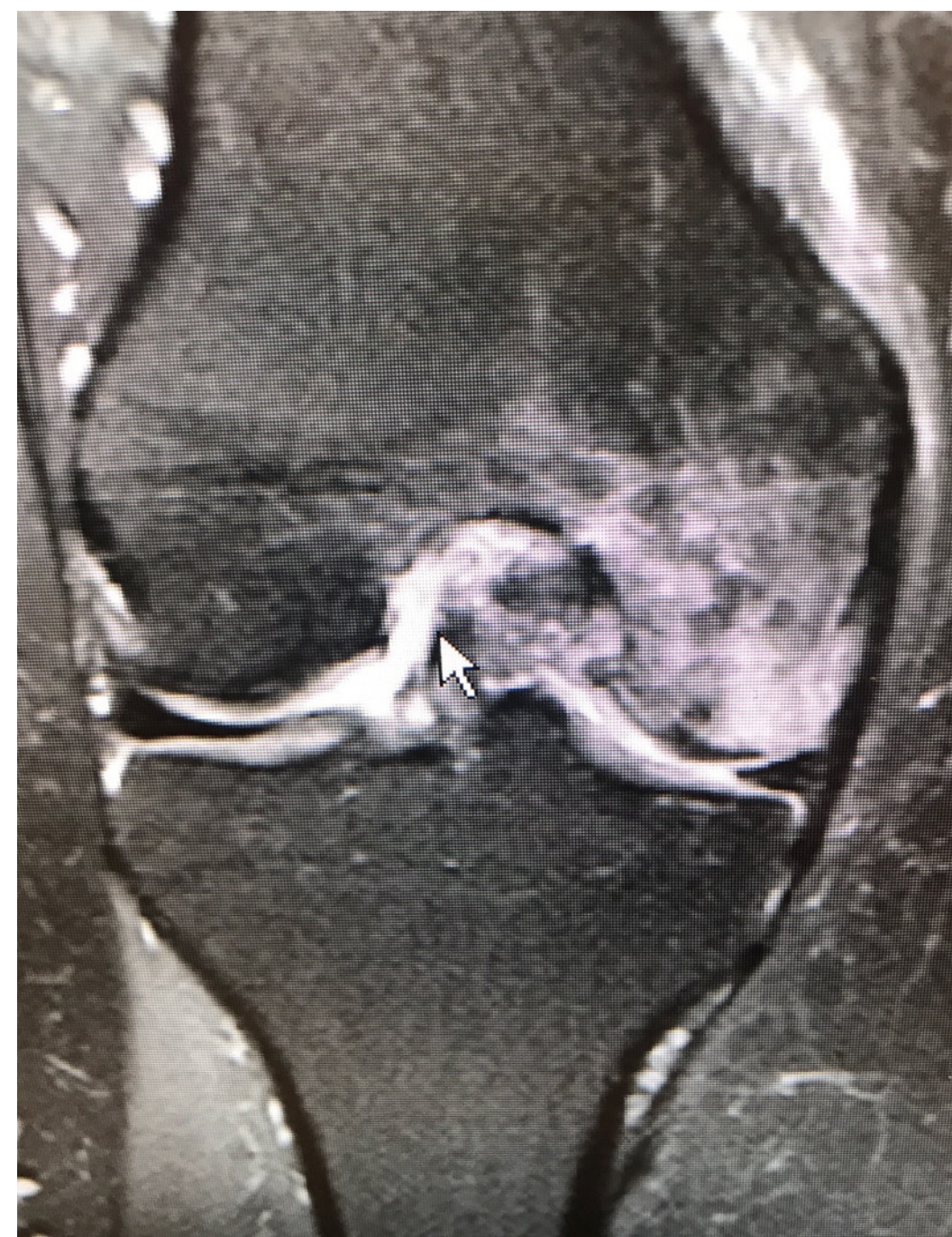


PanPlasty Knee System



- Localization
 - Precise
 - Arthroscopic Referencing
- Access
 - Guided
 - Multiple points
- Delivery
 - Variable sizes
 - Multiple substances
- Confirmation-streamlines

Precise Targeting/Proper Agent



PanPlasty Knee System



- Comprehensive Treatment: trifecta – all the pathology
- ***Intraarticular (IA):*** Arthroscopy
 - Structural: chondral, meniscal, ligamentous
- ***Biologic:*** IA and IO healing
- ***Intraosseous (IO):*** Extraarticular
 - Bone Marrow Lesions (BML) - “hidden”
 - Pain generator

PanPlasty Technique



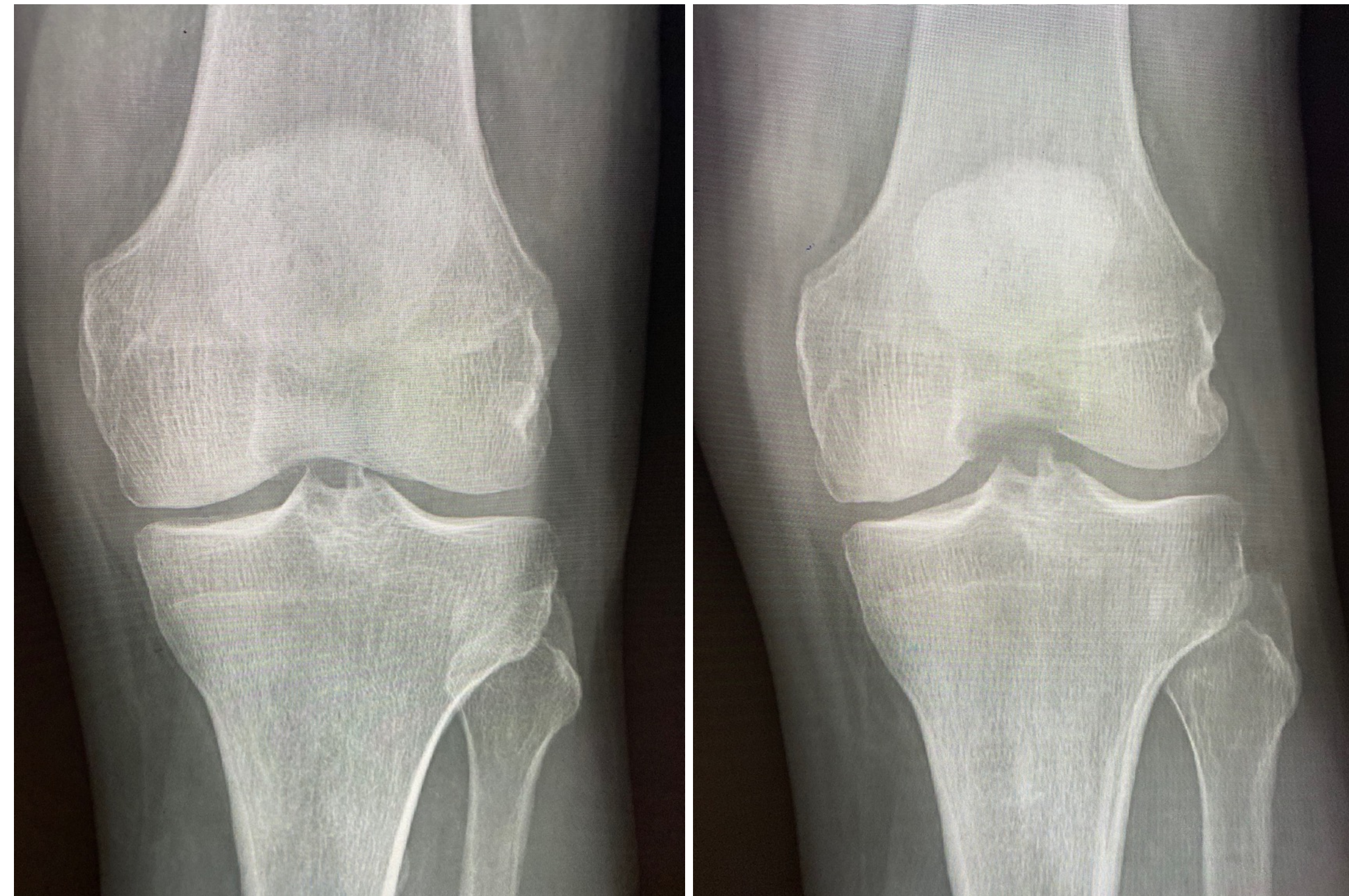
- **Identification** - MRI, define pathology, template plan
- Arthroscopy:
 - Treat intraarticular lesions
 - **Localize** IO BML precisely
- **Access** IO BML – precisely, guided
- **Delivery**
 - Decompress
 - Variable size – viscosity
 - **Confirmation** – mini C

Case 1: Acute/Chronic Degenerative



- 68 y/o male
- Pain X weeks, severe, needs cane
- No h/o injury
- No response to steroid injection
- Recommended meniscectomy/poss. TKR

Radiographs – Weight Bearing



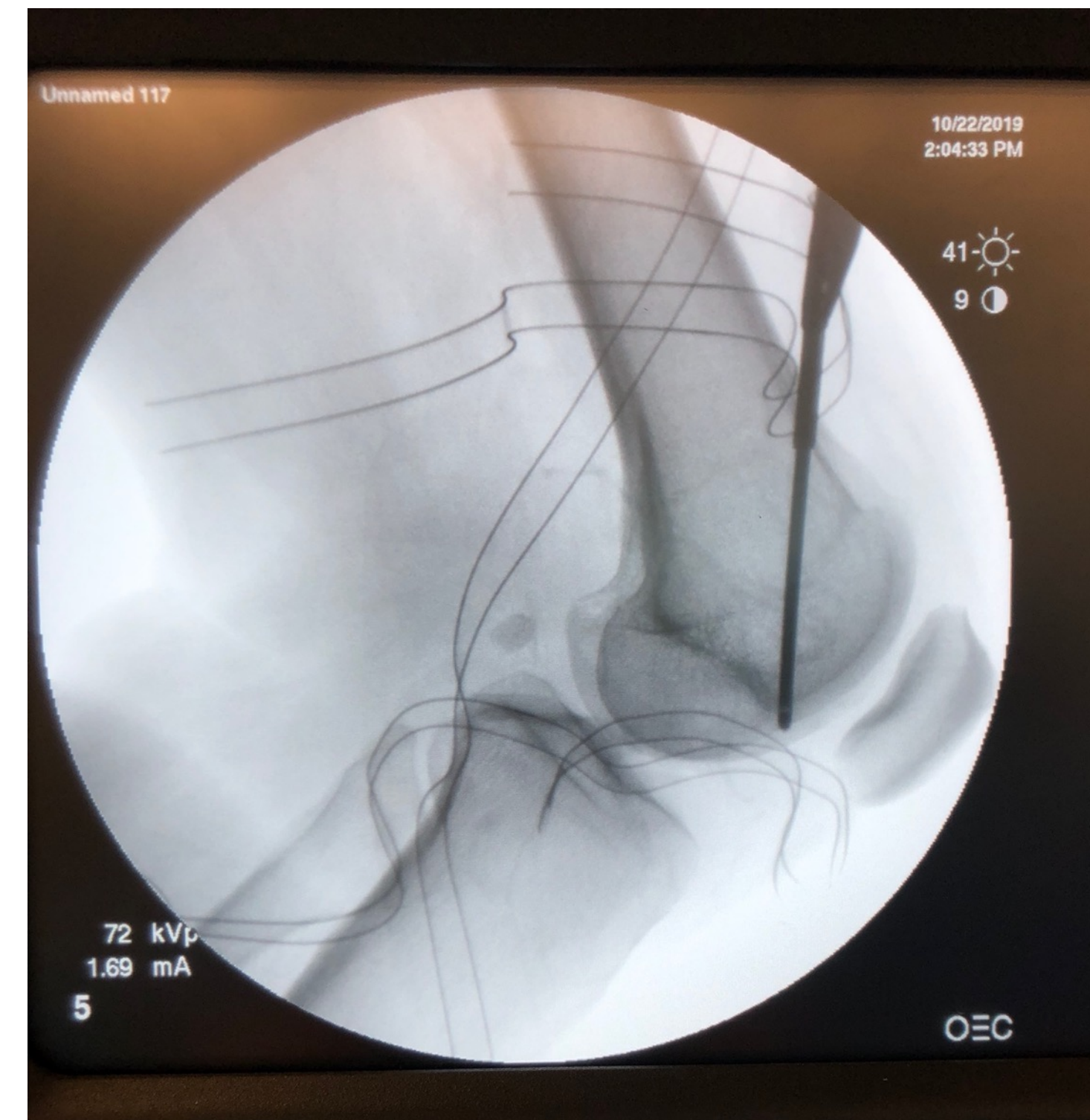
MRI – BML and Grade 4 Chondral Lesion



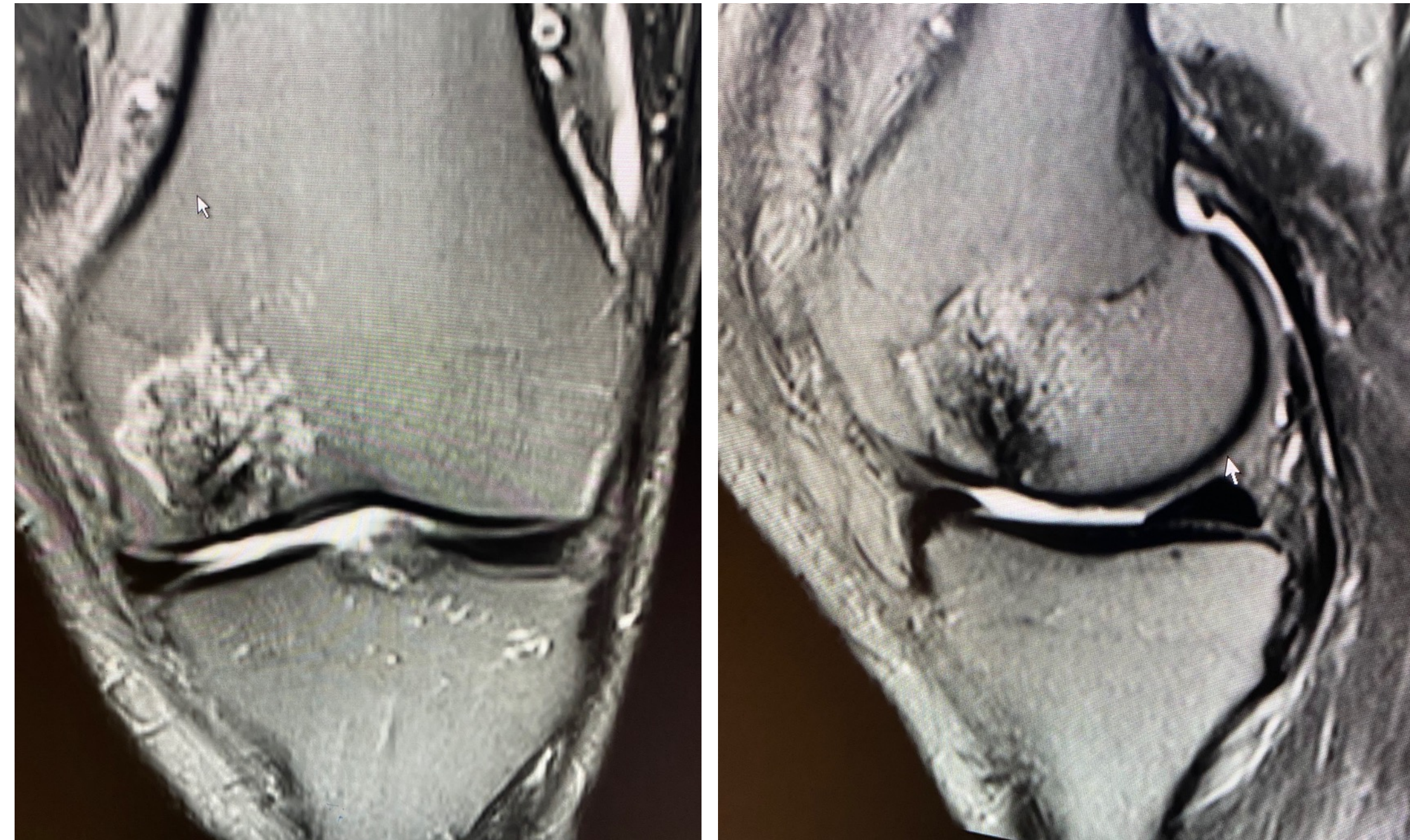
Arthroscopic Localization



Fluoroscopic Confirmation



Post Op: Precise Targeting - Healing

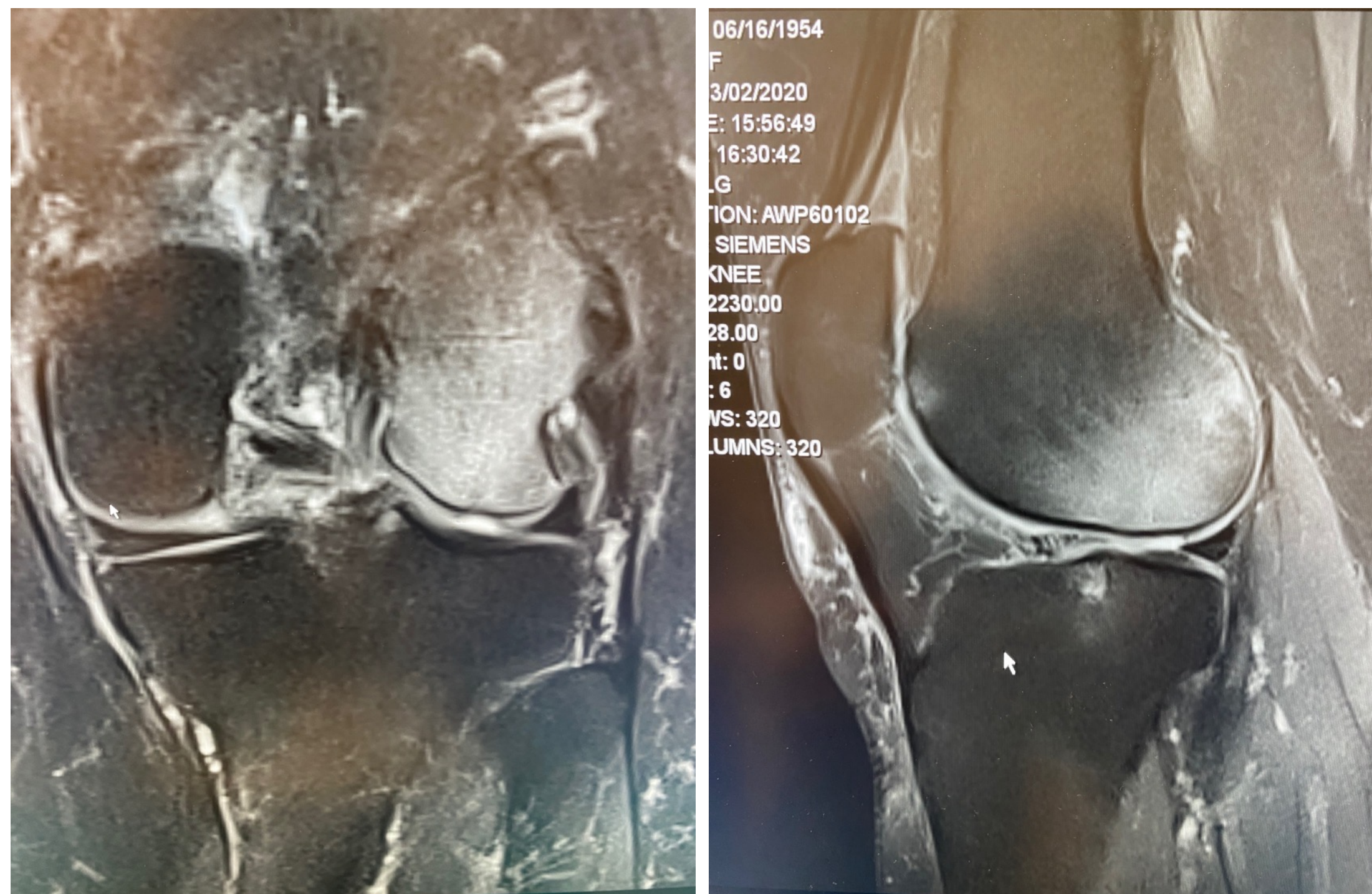


Case Presentation 2

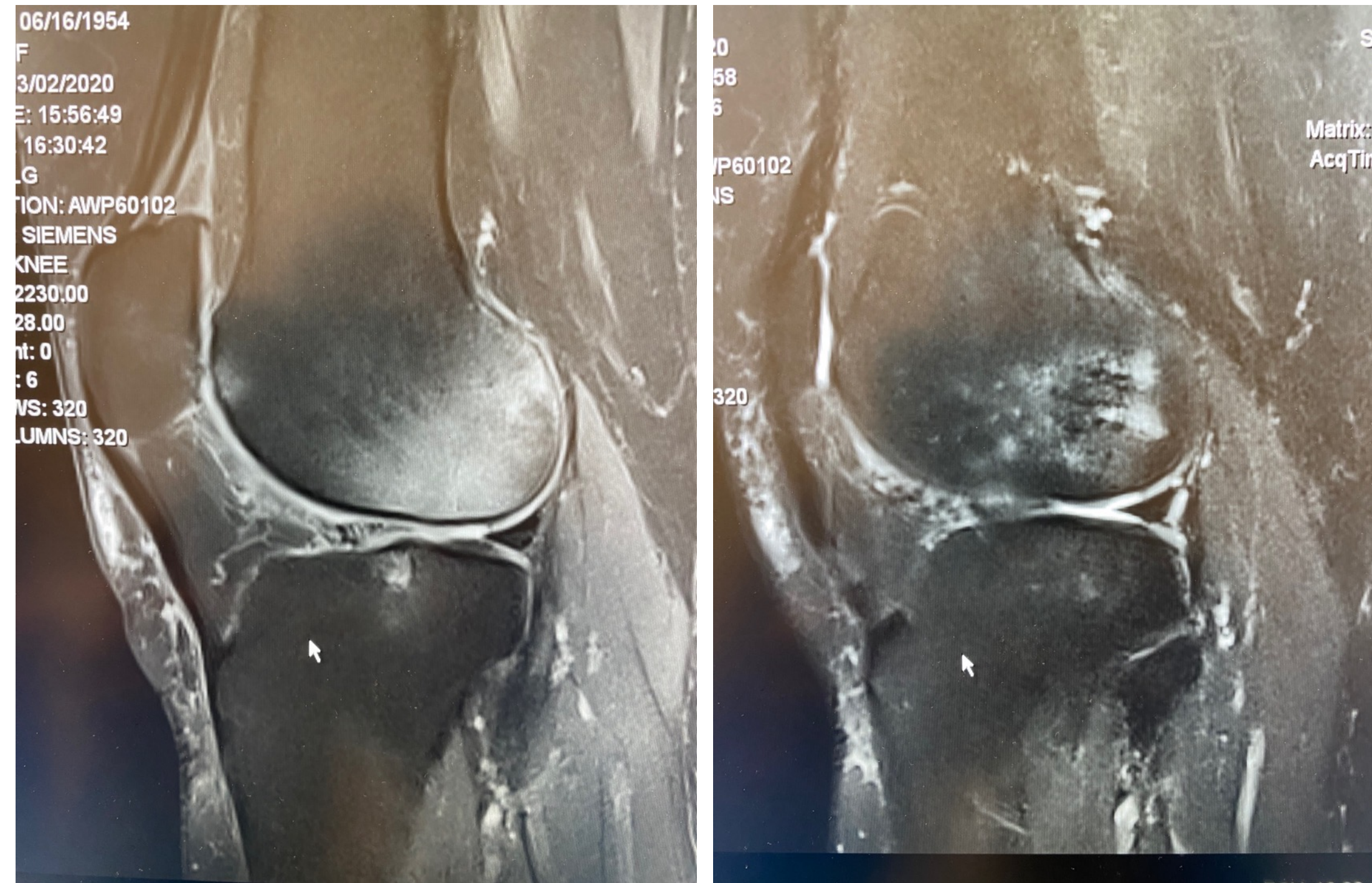


- Physician
- Several mos h/o severe pain - *atypical*
- Could not arise from seated position
- PE: joint line tender, pain with flexion
- Imaging
- No response to IA injection
- Failure of extensive conservative treatment

Imaging – MRI Subchondral Fracture



Two months post-op



References



1. Mark H. Edwards, Camille Parsons, Olivier Bruyère, Forence Petit Dop, Roland Chapurlat, Frank W. Roemer, Ali Guermazi, Souhil Zaim, Harry Genant, Jean-Yves Reginster, Elaine M. Dennison, Cyrus Cooper, and the SEKOIA Study Group. **High Kellgren-Lawrence Grade and Bone Marrow Lesions Predict Worsening Rates of Radiographic Joint Space Narrowing; The SEKOIA Study.** *The Journal of Rheumatology*, 2016 DOI: [10.3899/jrheum.150053](https://doi.org/10.3899/jrheum.150053)
2. Felson DT, McLaughlin S, Goggins J, et al. 2003. Bone marrow edema and its relation to progression of knee osteoarthritis. *Ann Intern Med* **139**: 330– 336.

Status of PanPlasty Knee System



- PanPlasty Instrument and Trocars FDA registered
- Initiating new sites using durable metal with custom trocars

Catalog #	Description
901-001	PanPlasty Knee Durable Instrument, non-sterile
RIN-11-196-CT	PanPlasty Trocar, side delivery, sterile
RIN-11-196-OT	PanPlasty Trocar, end delivery, sterile





Get In Touch

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