

Latest Updates in Joint Replacement; What They Mean for Your Patient

Mr Khalid Merghani MBBS, MRCS, ChM, FRCS

What are the Goals of Joint Replacement?

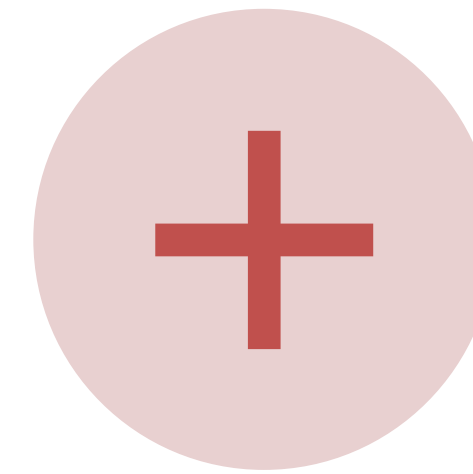
- The way it was....



PAIN RELIEF



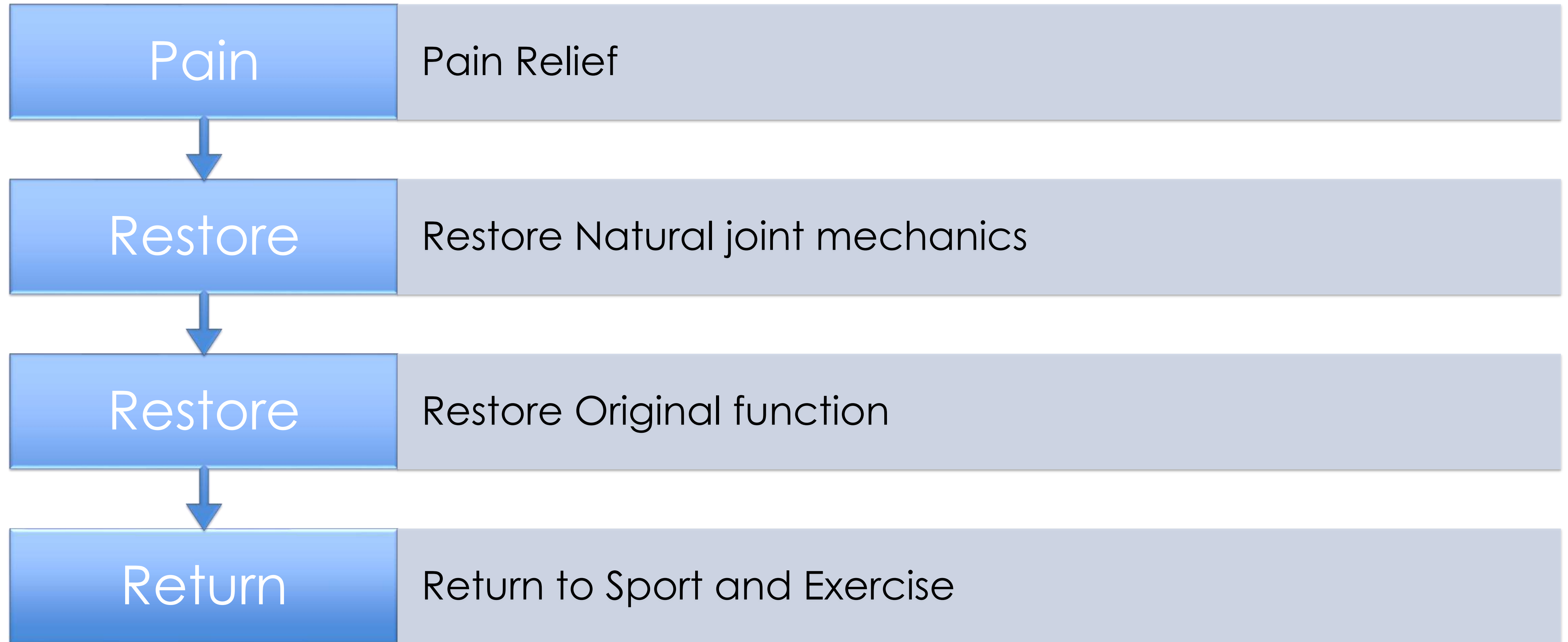
IMPROVE THE
JOINT MECHANICS.



IMPROVE THE
FUNCTION.

What are the Goals of Joint Replacement?

Currently



How do we meet the expectations



Approaches



Materials



Technology



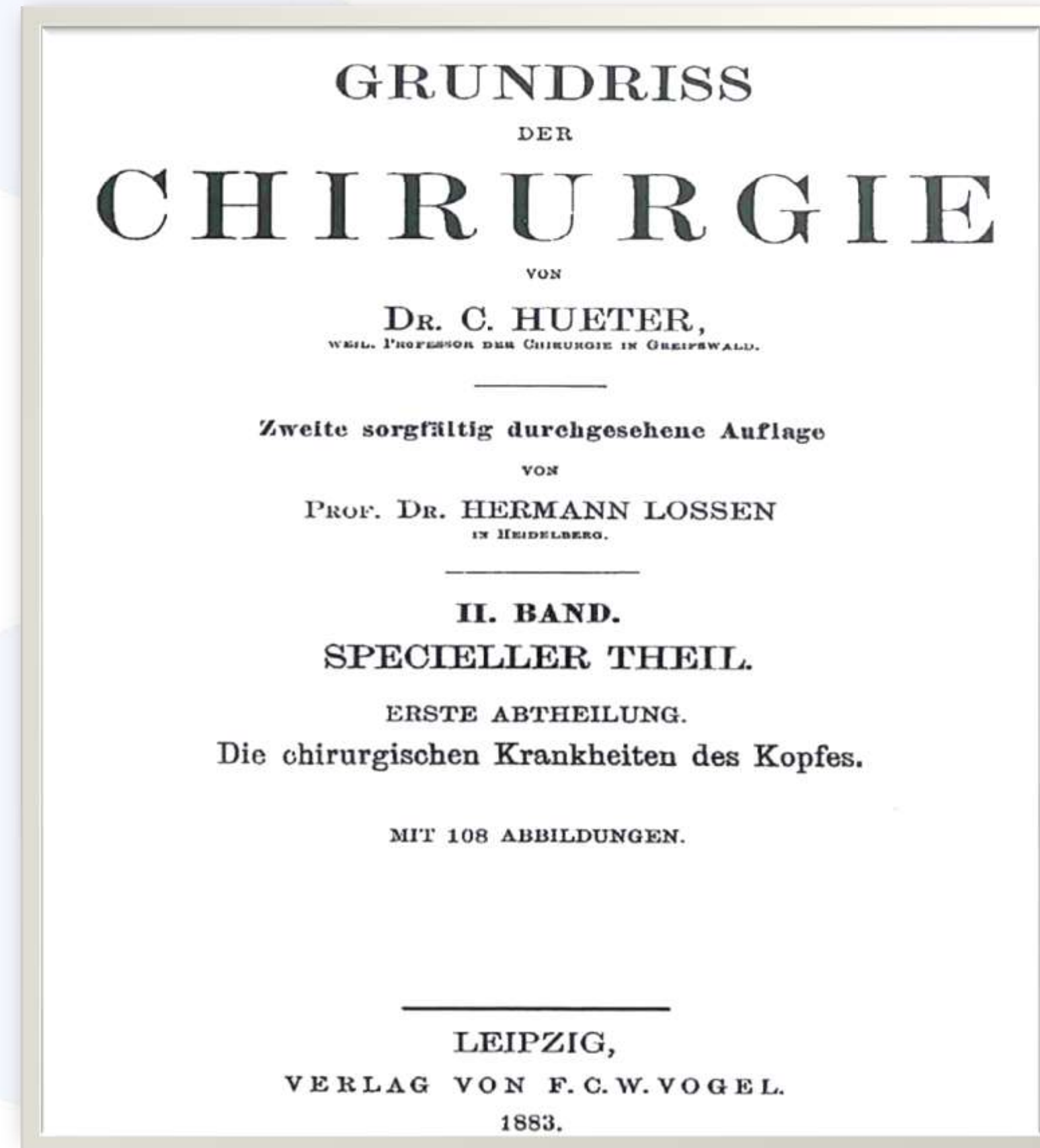
Rapid Personalised Recovery Protocol

Hip Arthroplasty



Direct Anterior Approach to Hip Replacement

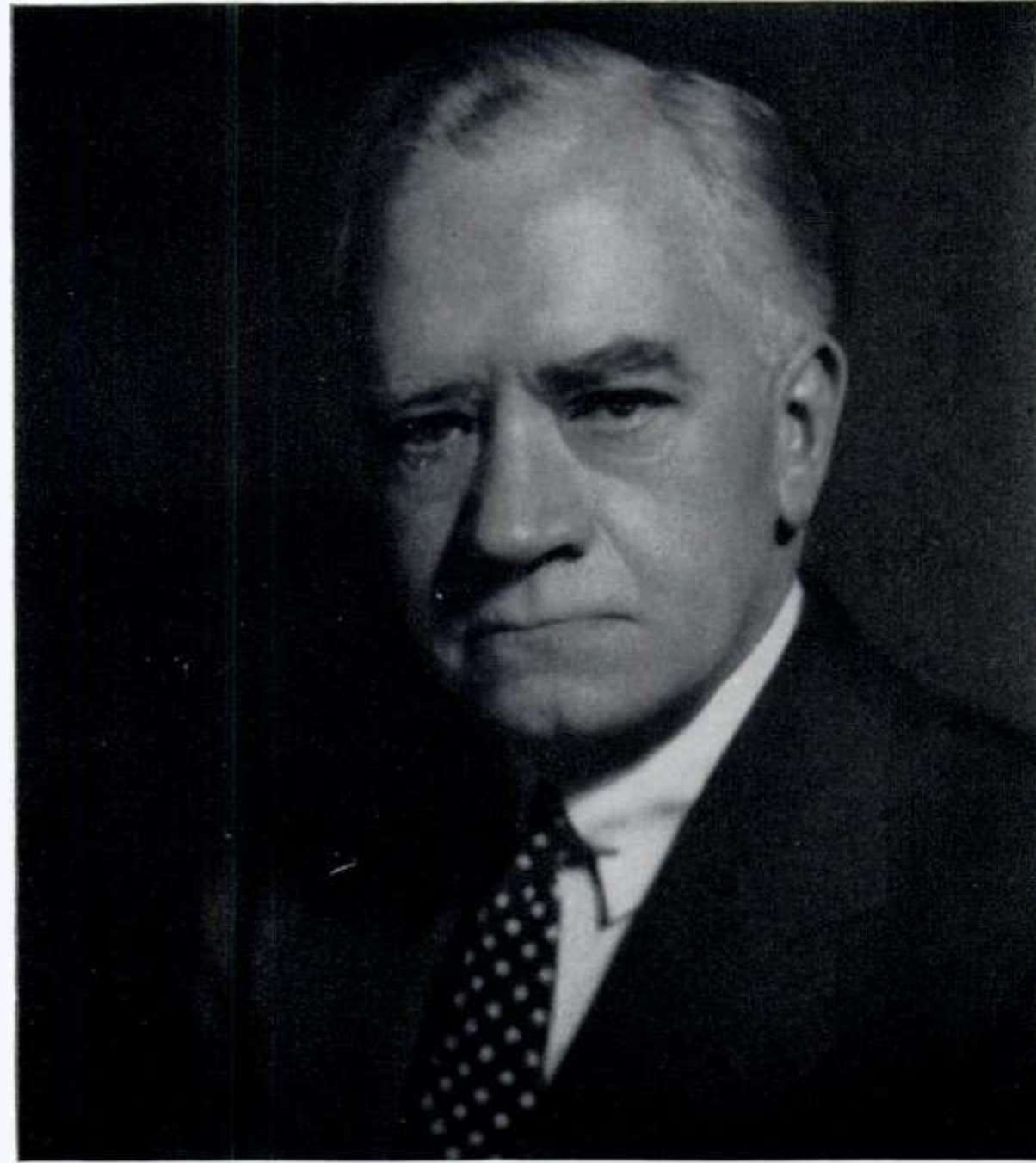
Direct Anterior Approach THR History



First described by Carl Hueter in Germany in 1883

Hueter, C. Fünfte abtheilung: die verletzung und krankheiten des hüftgelenkes , neunundzwanzigstes capitel.
In: Hueter C, editor. Grundriss der chirurgie. 2nd edition. Leipzig; FCW Vogel; 1882. P 129-200.

Direct Anterior Approach THR History



M. N. Smith Petersen

Use of the DAA in hip arthroplasty began with Smith Petersen

Smith Petersen, MN. A new supra-articular subperiosteal approach to the hip joint. *JBJS Am* 1917; s2-15: 592-5
Smith Petersen, MN. Approach to and exposure of the hip joint for mold arthroplasty. *JBJS Am* 1949; 31: 40-6

Why Direct Anterior Approach (DAA)?

Minimal interference with the patient anatomy

More anatomical visualisation of the hip joint

Rapid return to normality

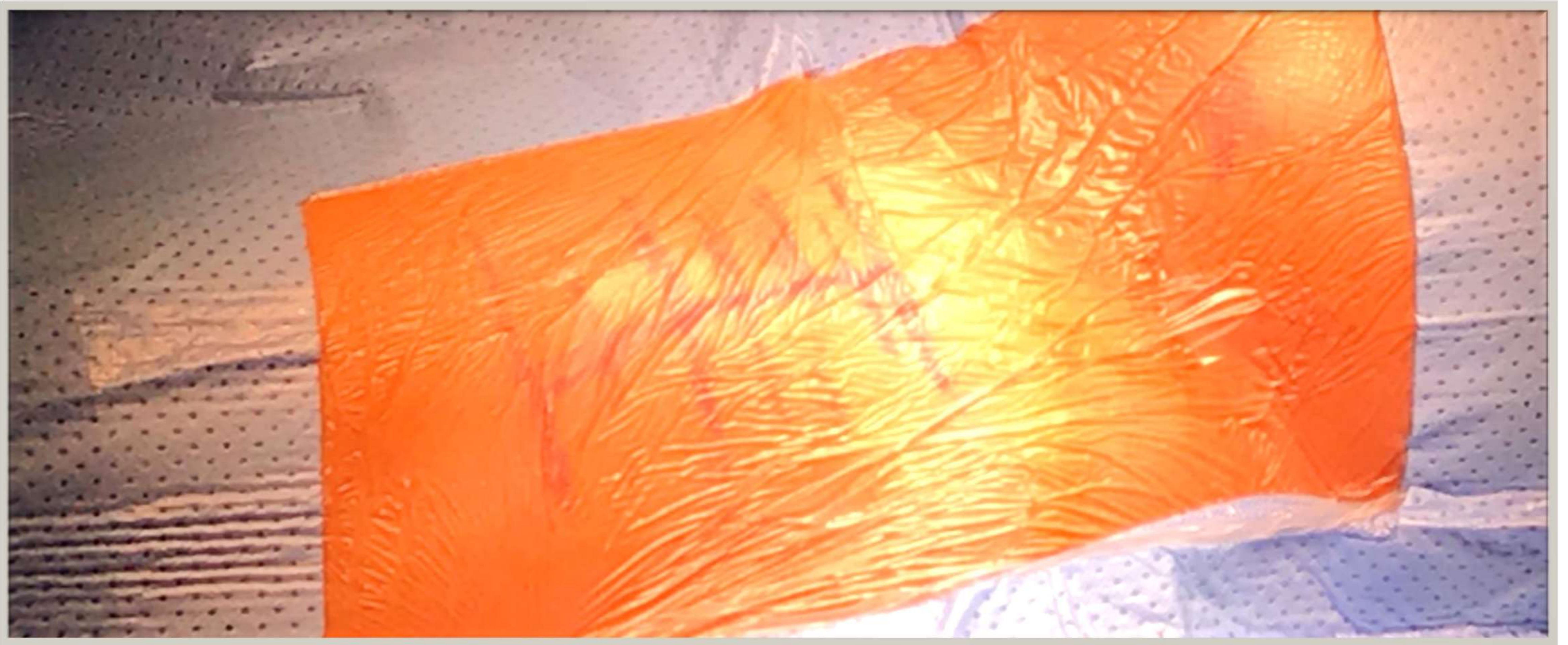
Less restrictions

Direct Anterior Approach (DAA)

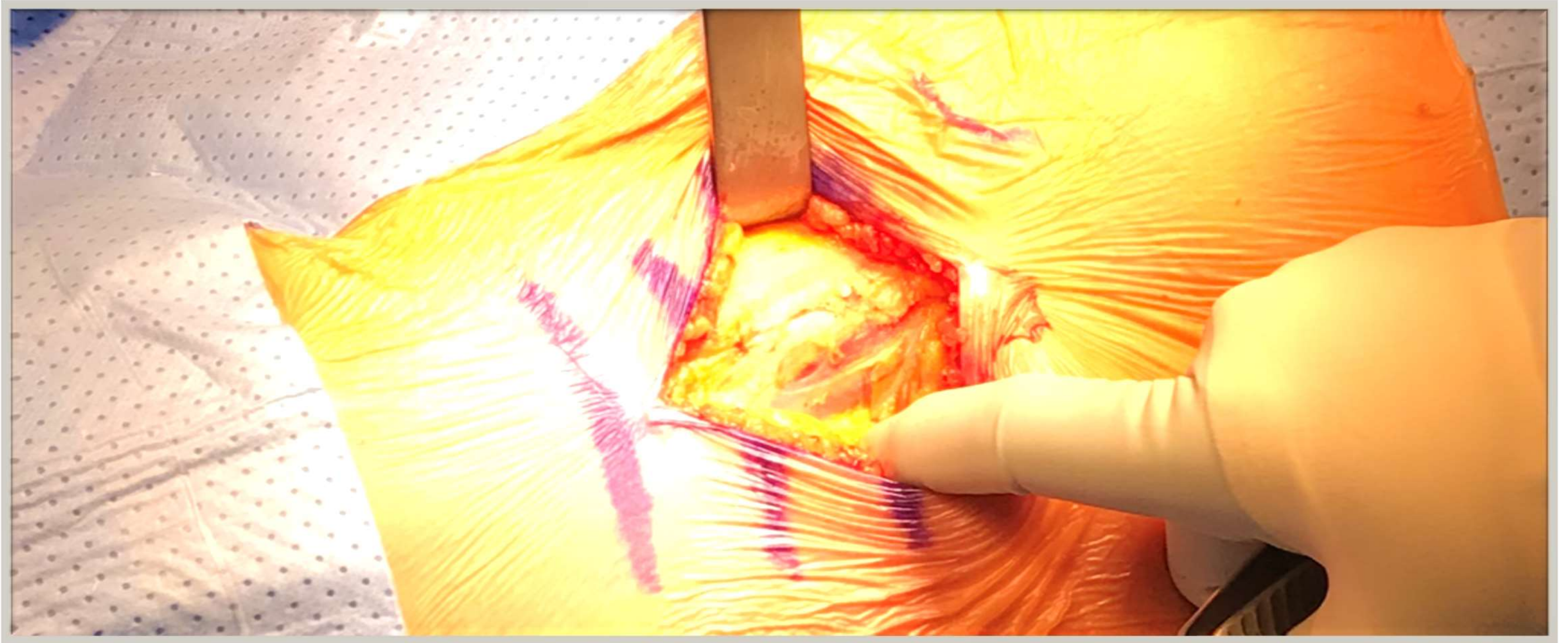
- Supine
- Standard Operating Table
- No hyper extension hip
- Grippers



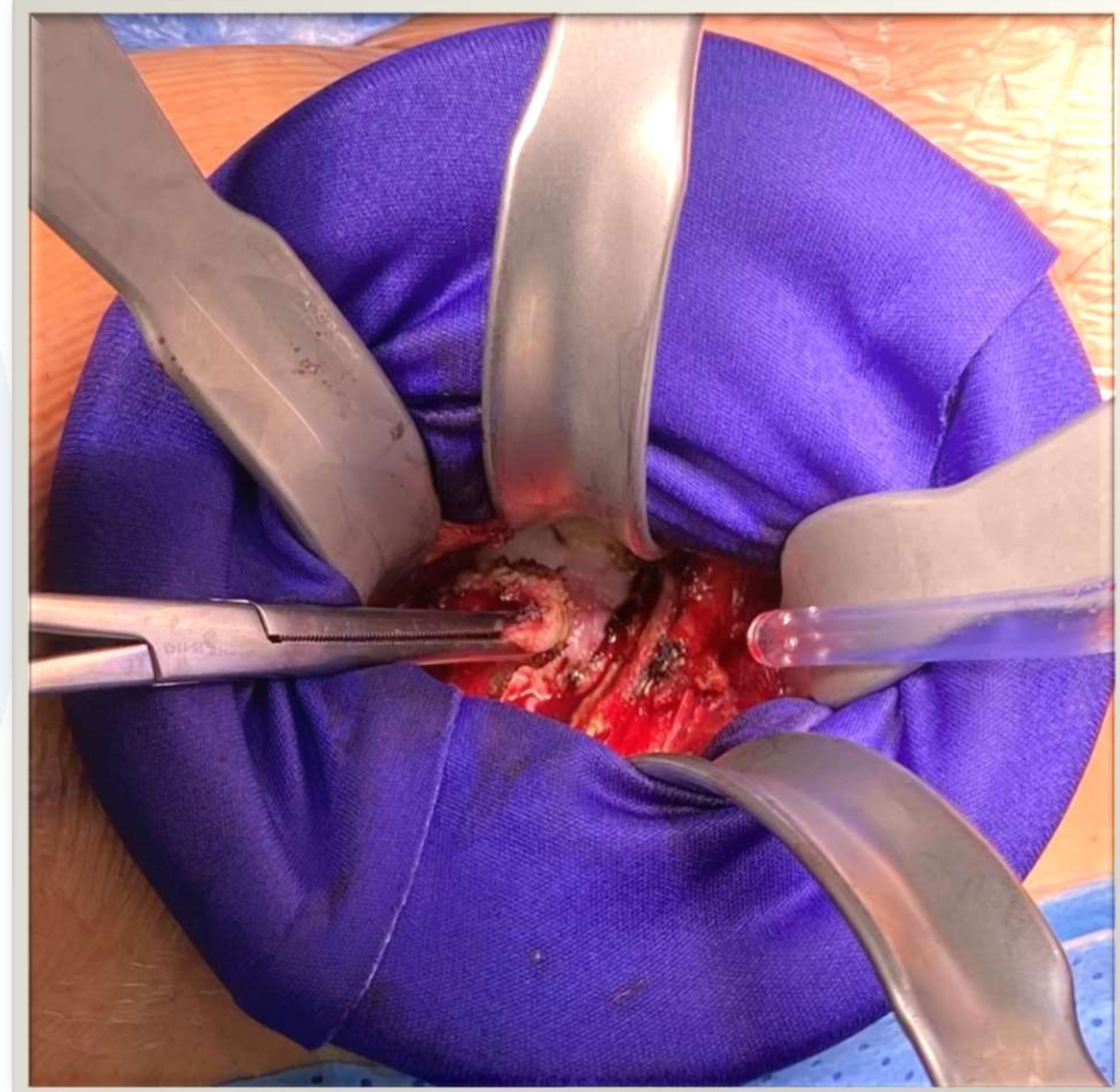
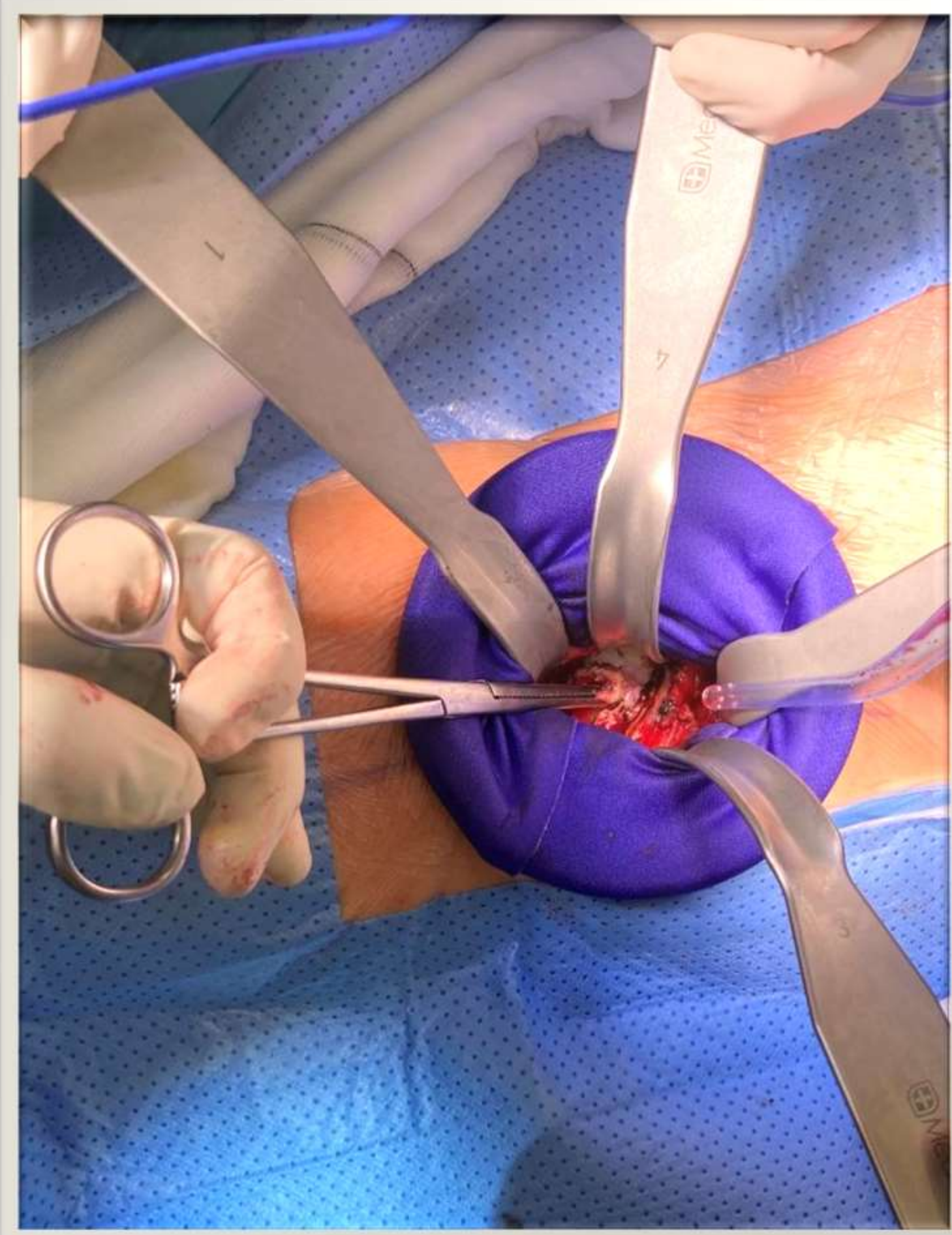
Incision



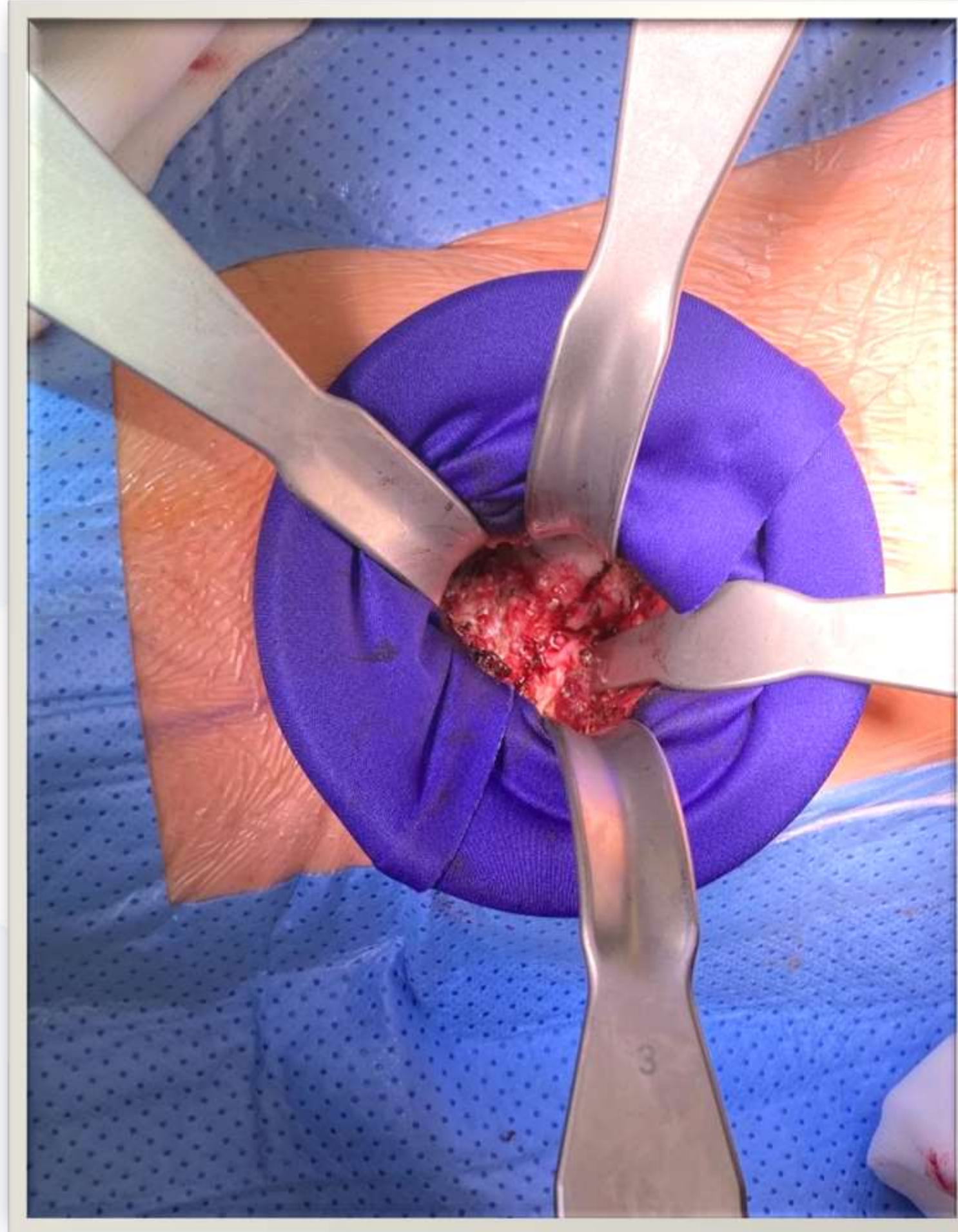
Identify Interval Between the Muscles



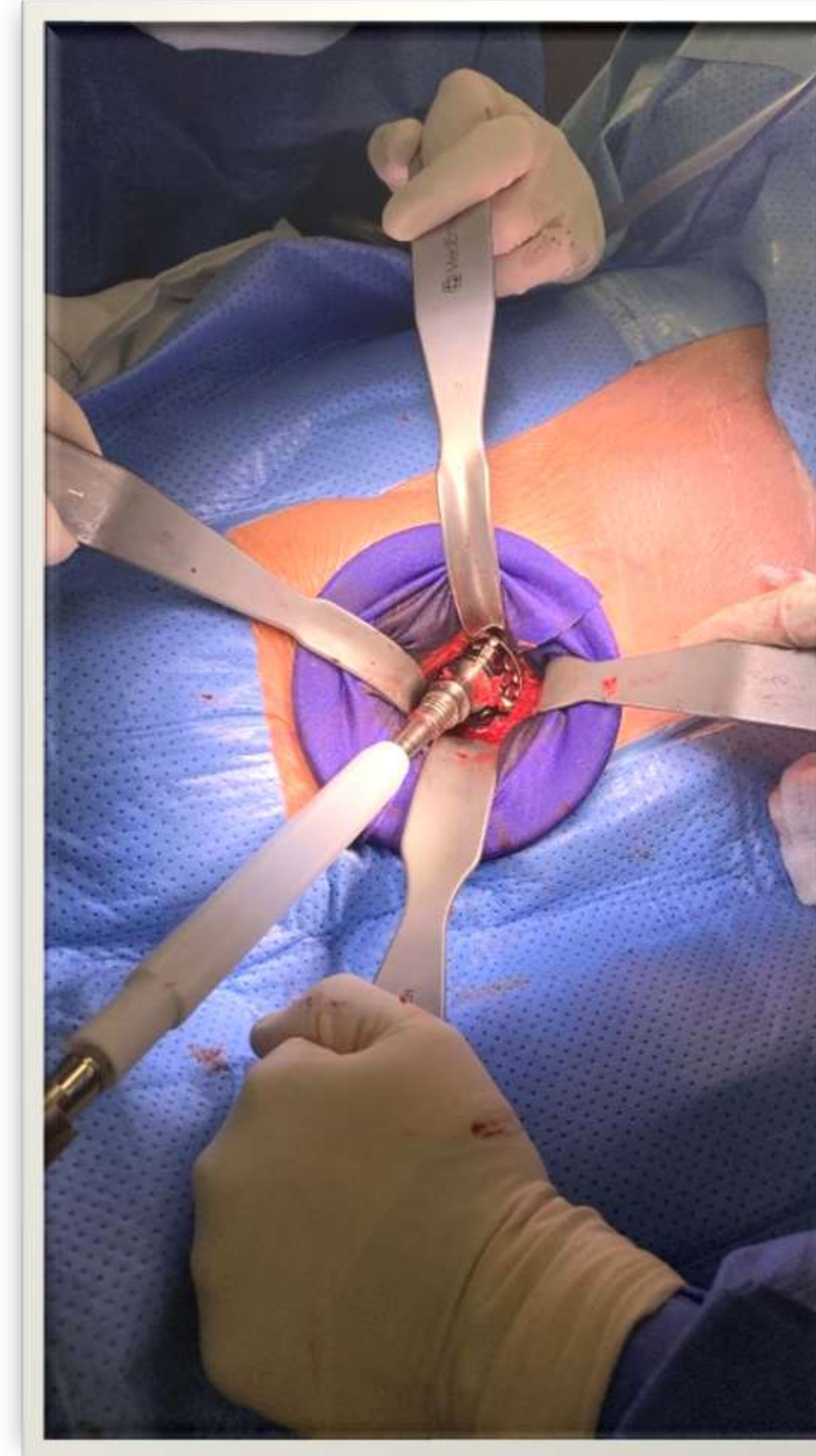
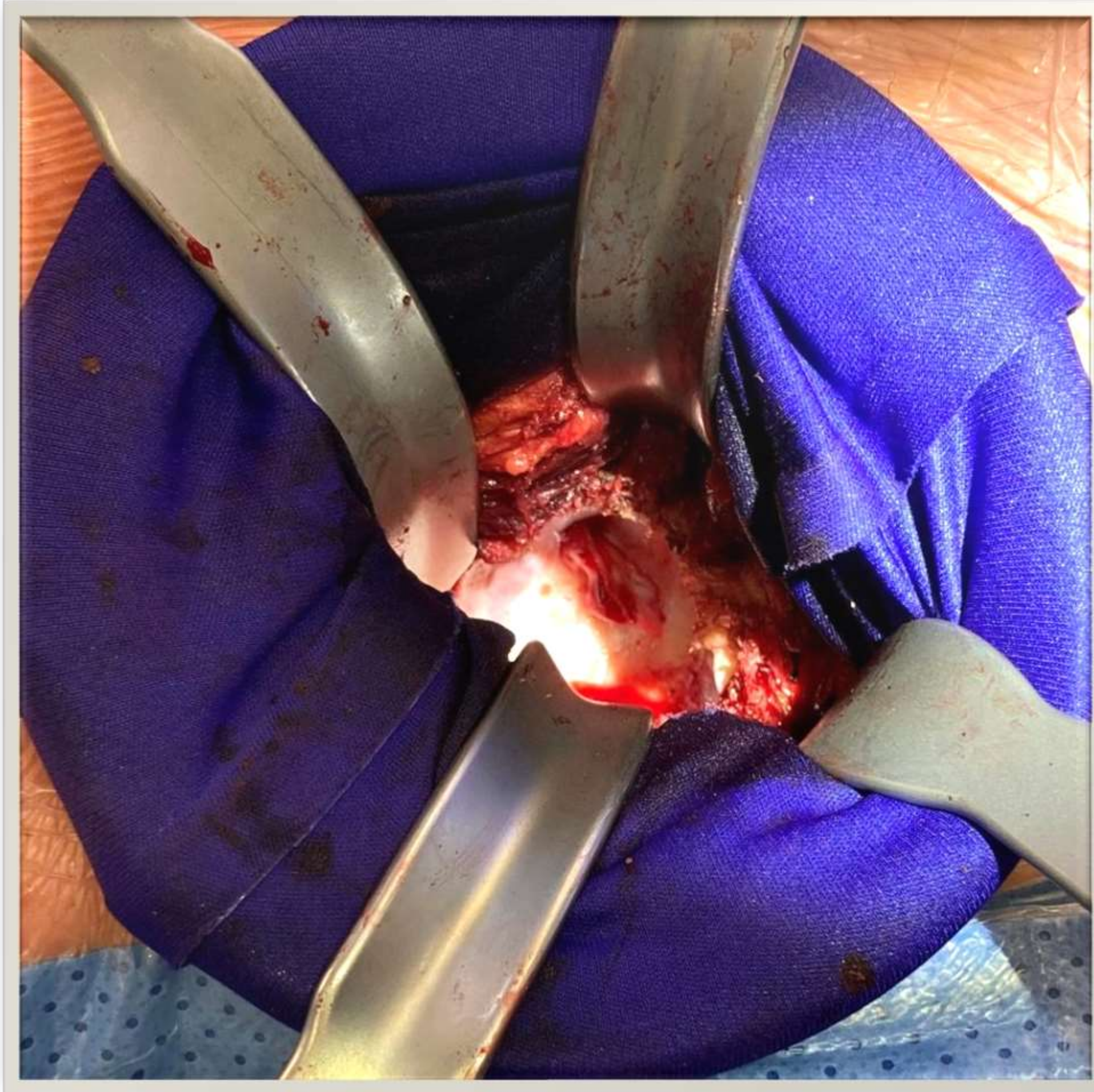
Expose Anterior Hip Capsule



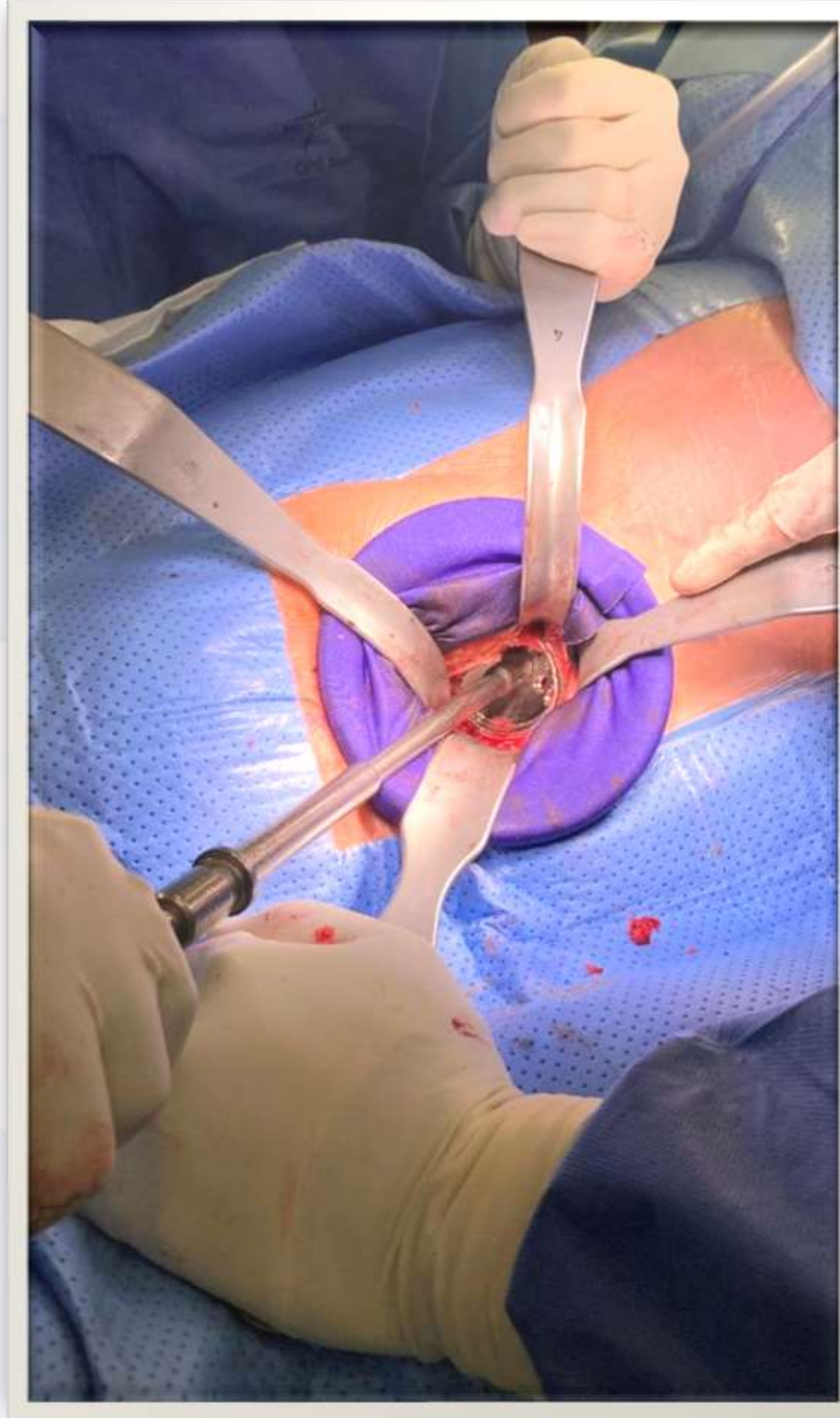
Place Retractors Intracapsularly Make Neck Osteotomy



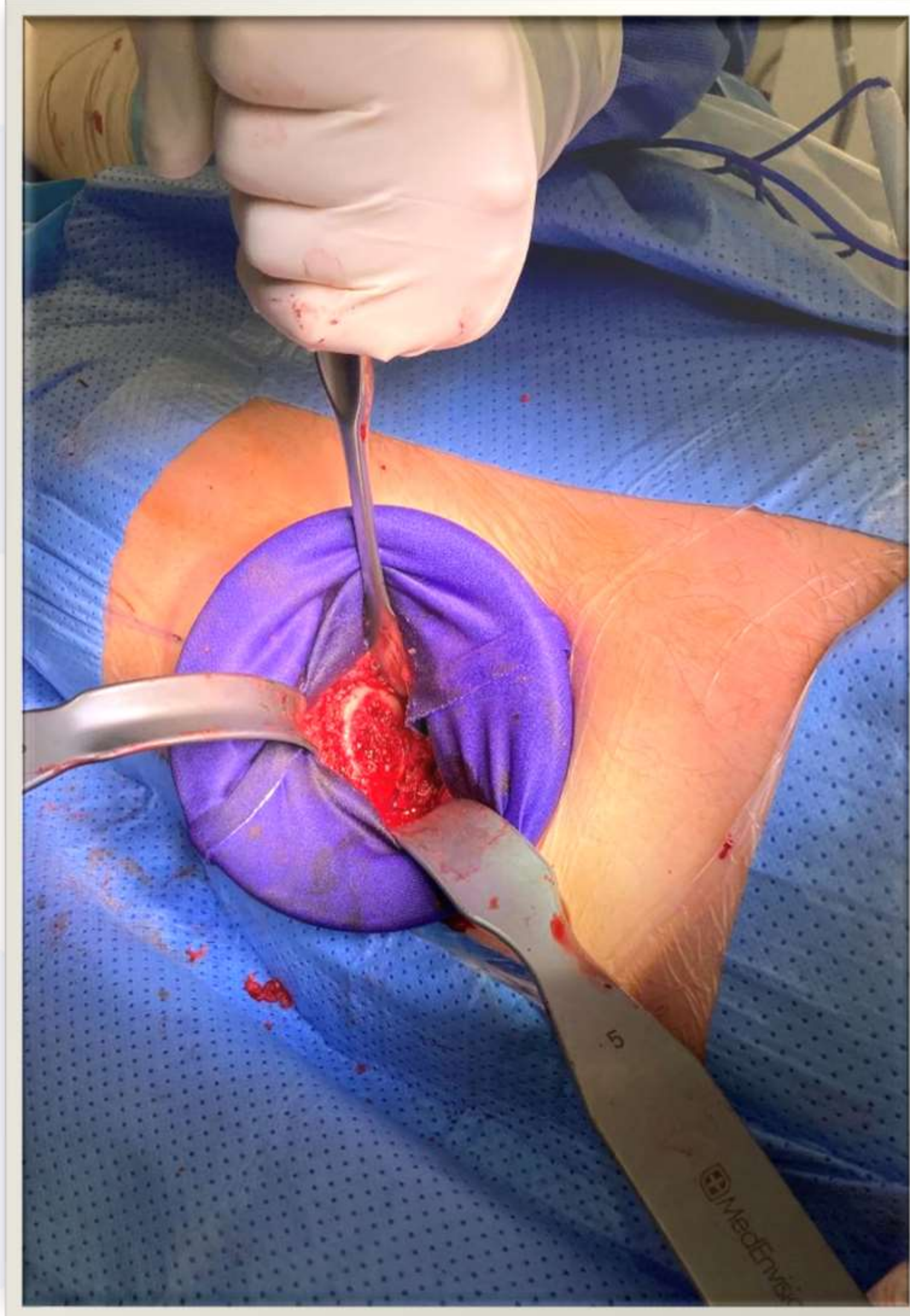
Expose Acetabulum



Cup Insertion



Expose the Femur



Trial Reduction

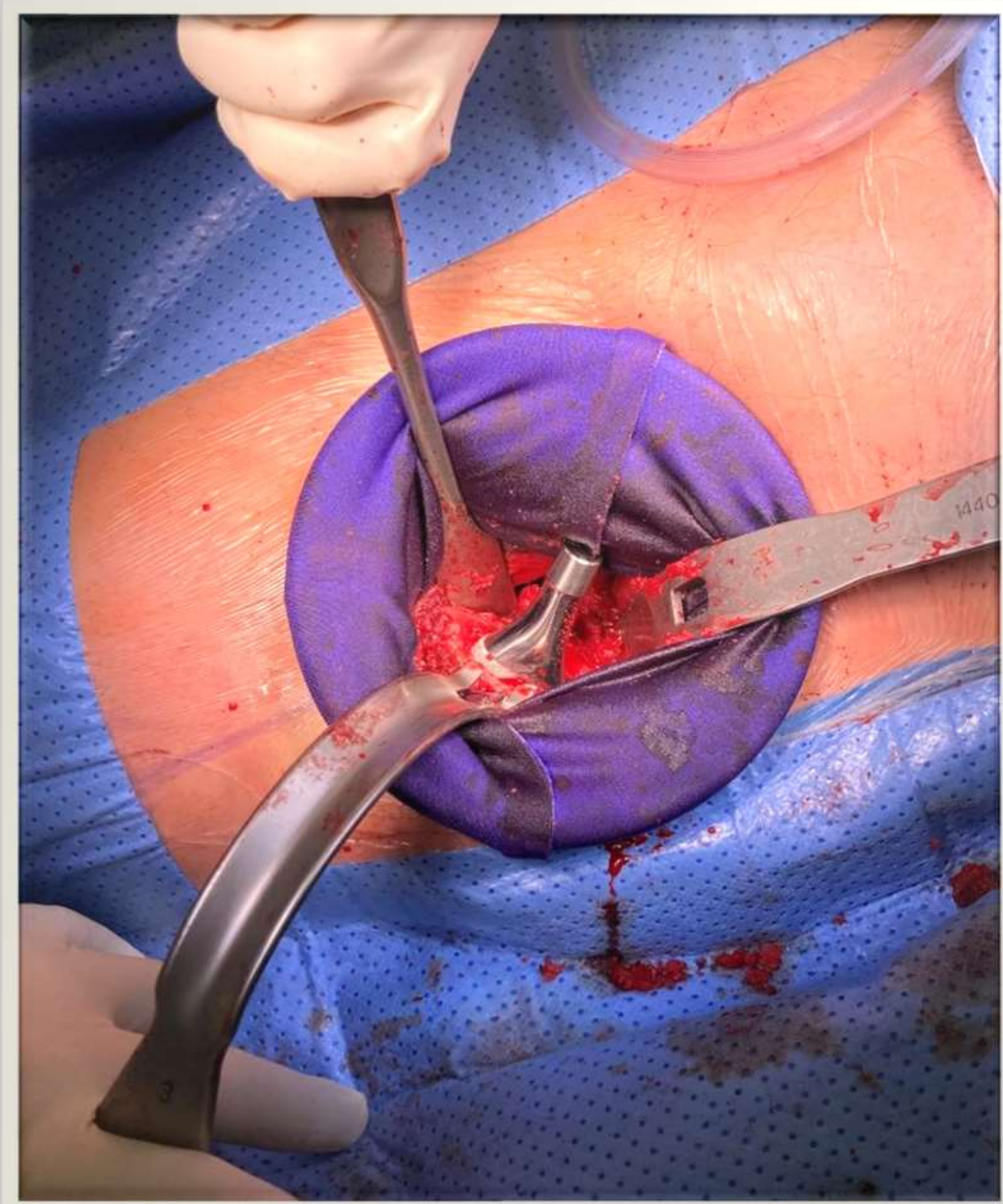
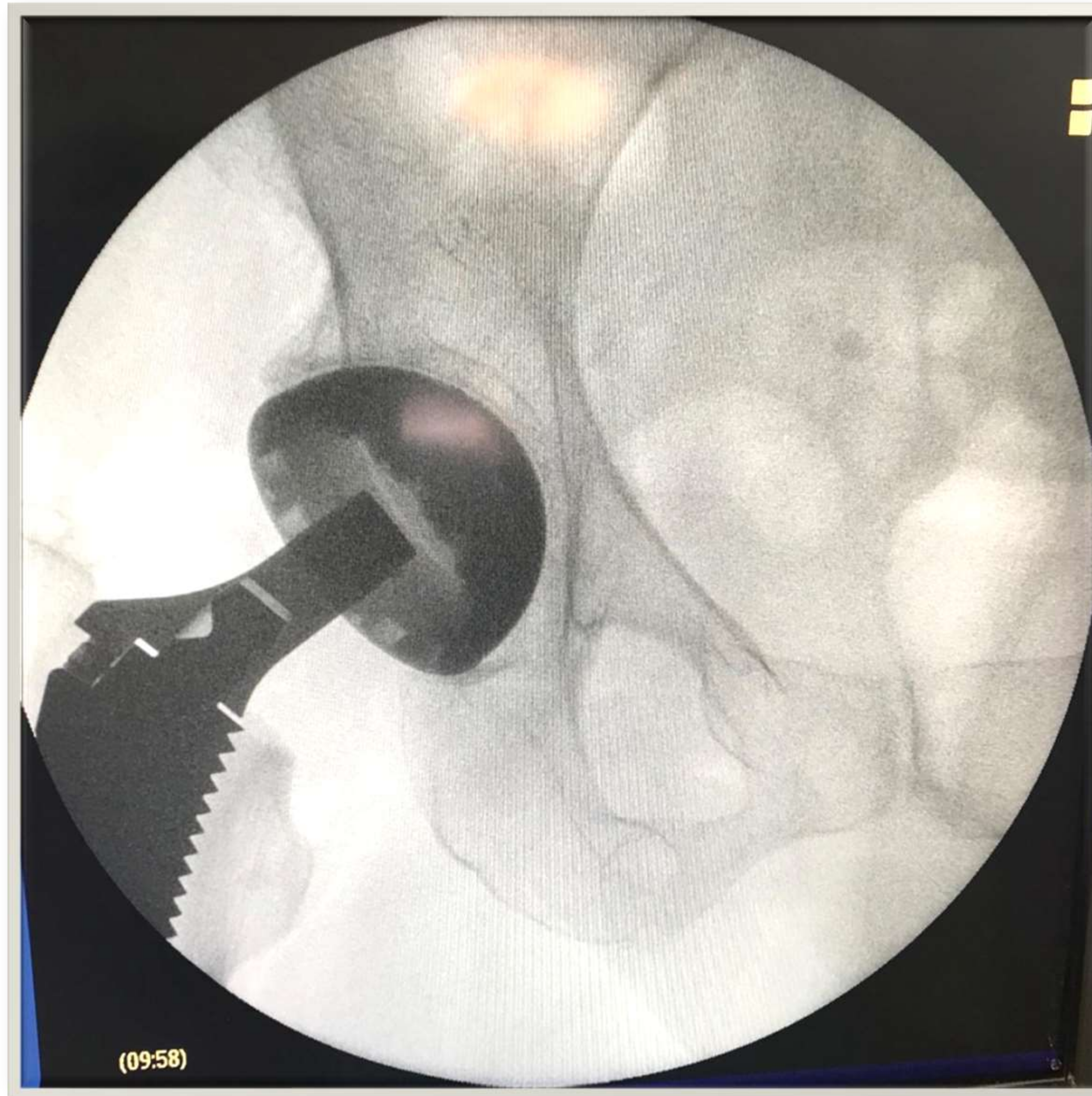
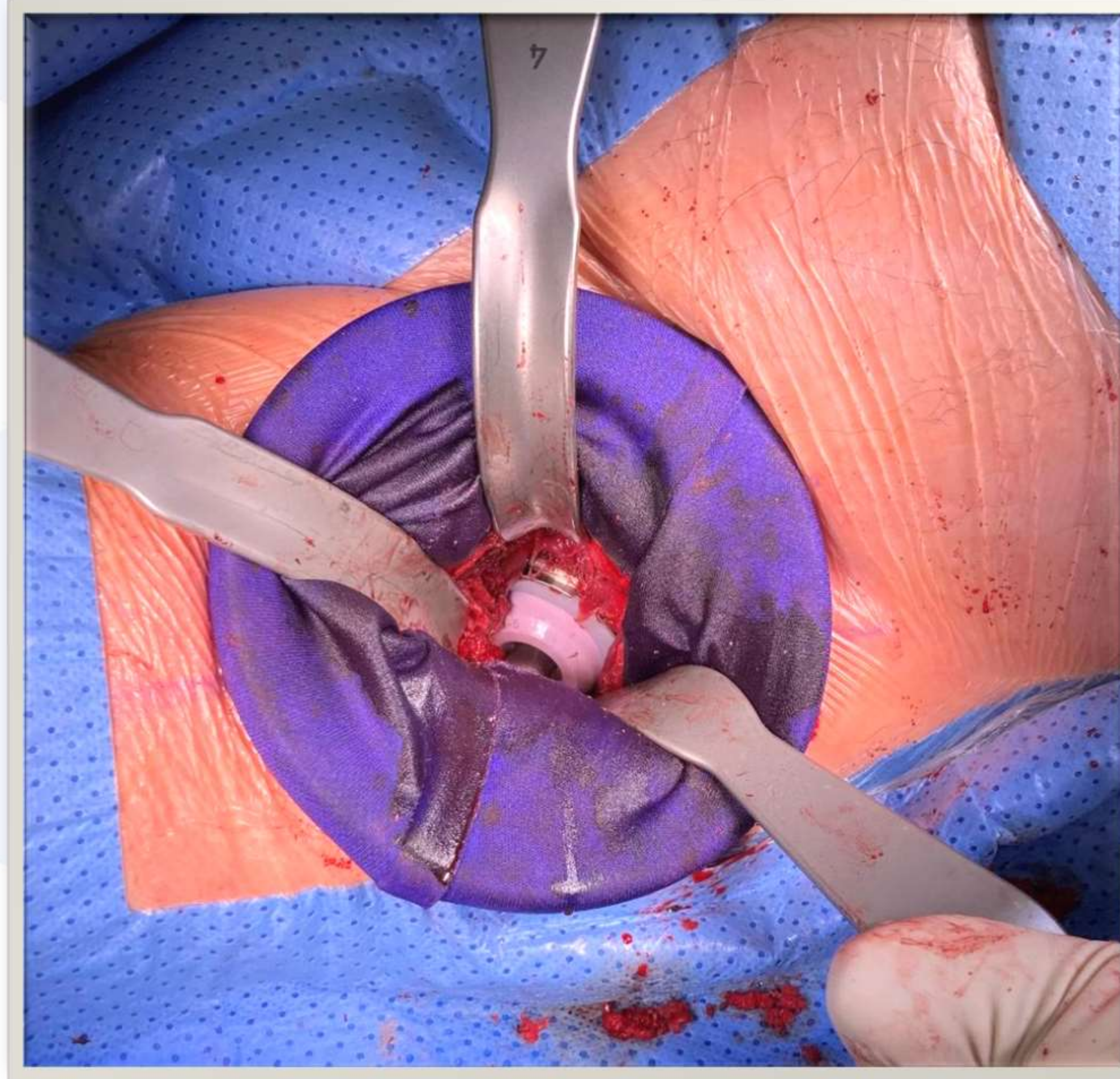


Image Intensification Allows Instant Assessment



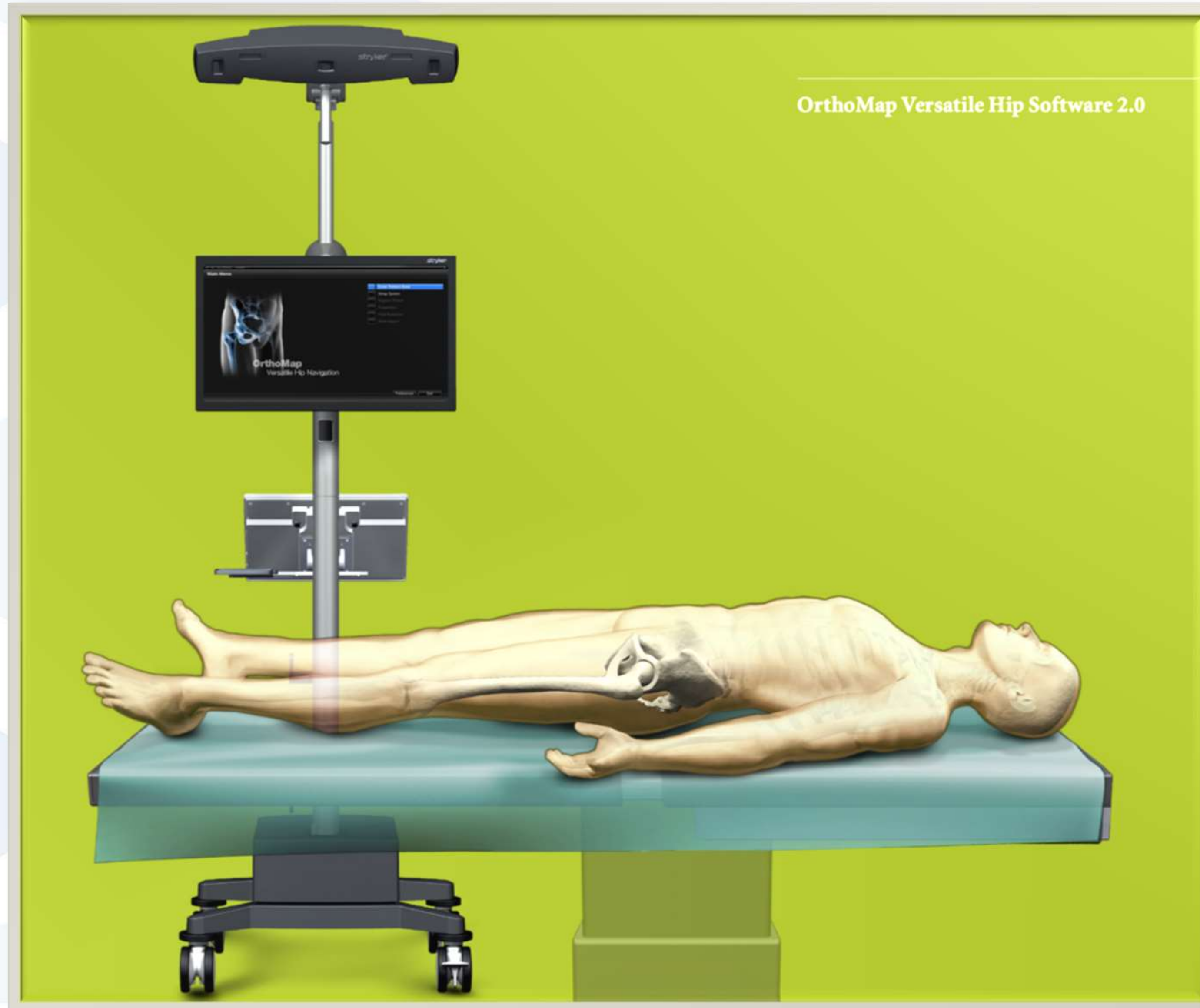
Definitive Prosthesis



Closure



Accuracy



Accuracy

Stem Insertion | Left Leg

Valgus **5°** Anteversion **33°** Size 8

Head Offset: -2.5 mm
Neck Angle: 127°
Optimize

Lat. 1
Lat. 2
Long 8 Long 2 Total

Record the stem position.

SecurFit HA, Size 8
C-Taper Alumina, Ø 28

Record Position

Back Main Menu Next

Final Cup Insertion | Left Leg

Inclination **60°** Anteversion **7°**
Inclination 55° Anteversion 6°

Depth to Seat **9mm**
CH 16 mm

Cup Height: 16 mm
Anatomical Plane
Record Position
Depth to Seat

To record Depth to Seat, hold pointer tip onto the cup rim and press button.

Back Main Menu Next

Femur

Final Reduction | Left Leg

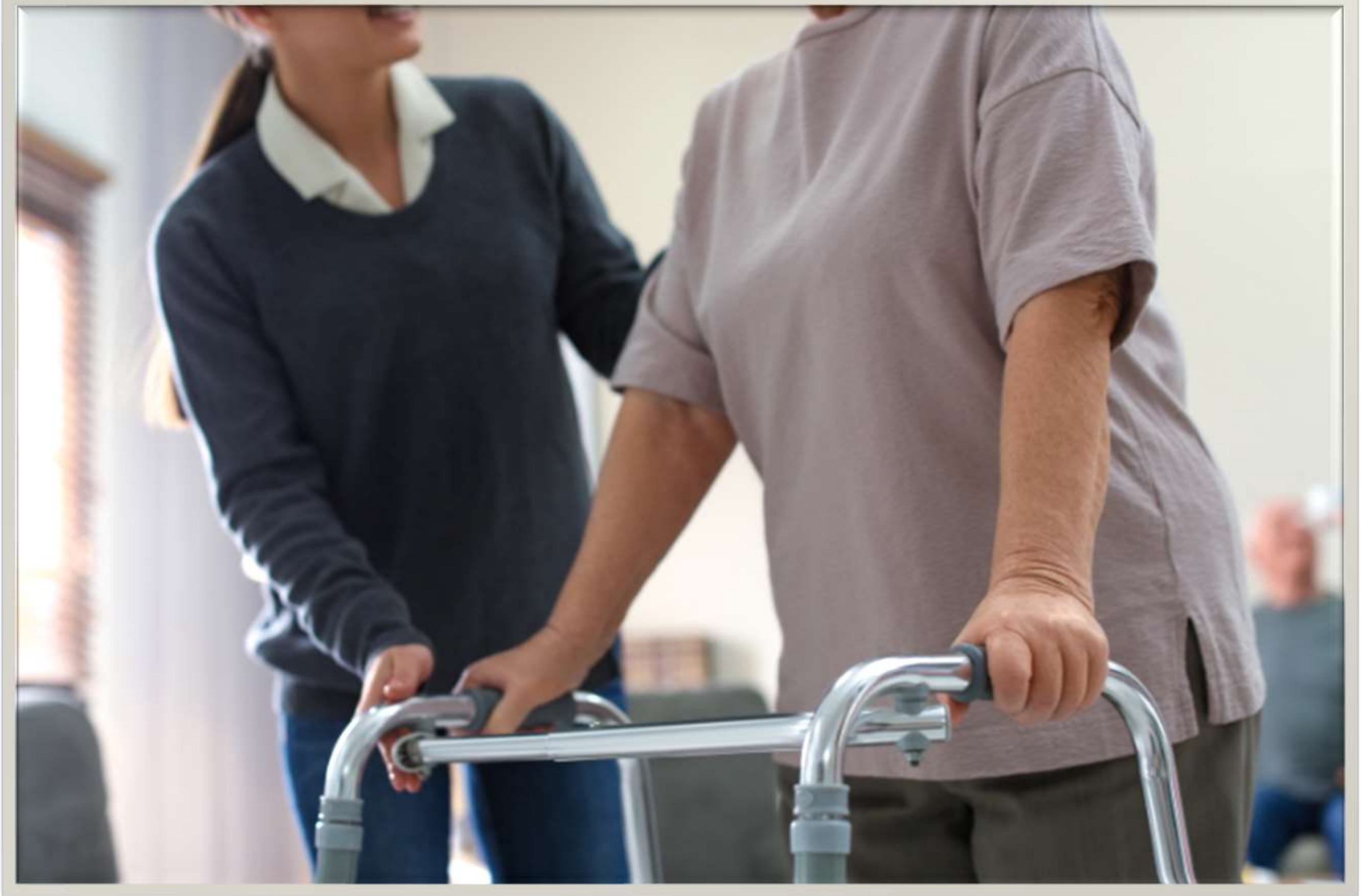
Flexion **39°**
Abduction **36°**
Int. Rotation **49°**

Find Hip Center
Adjust Leg Length & Offset
Max. Flexion and Int. Rot.
Max. Extension and Ext. Rot.
Document Implant Selection

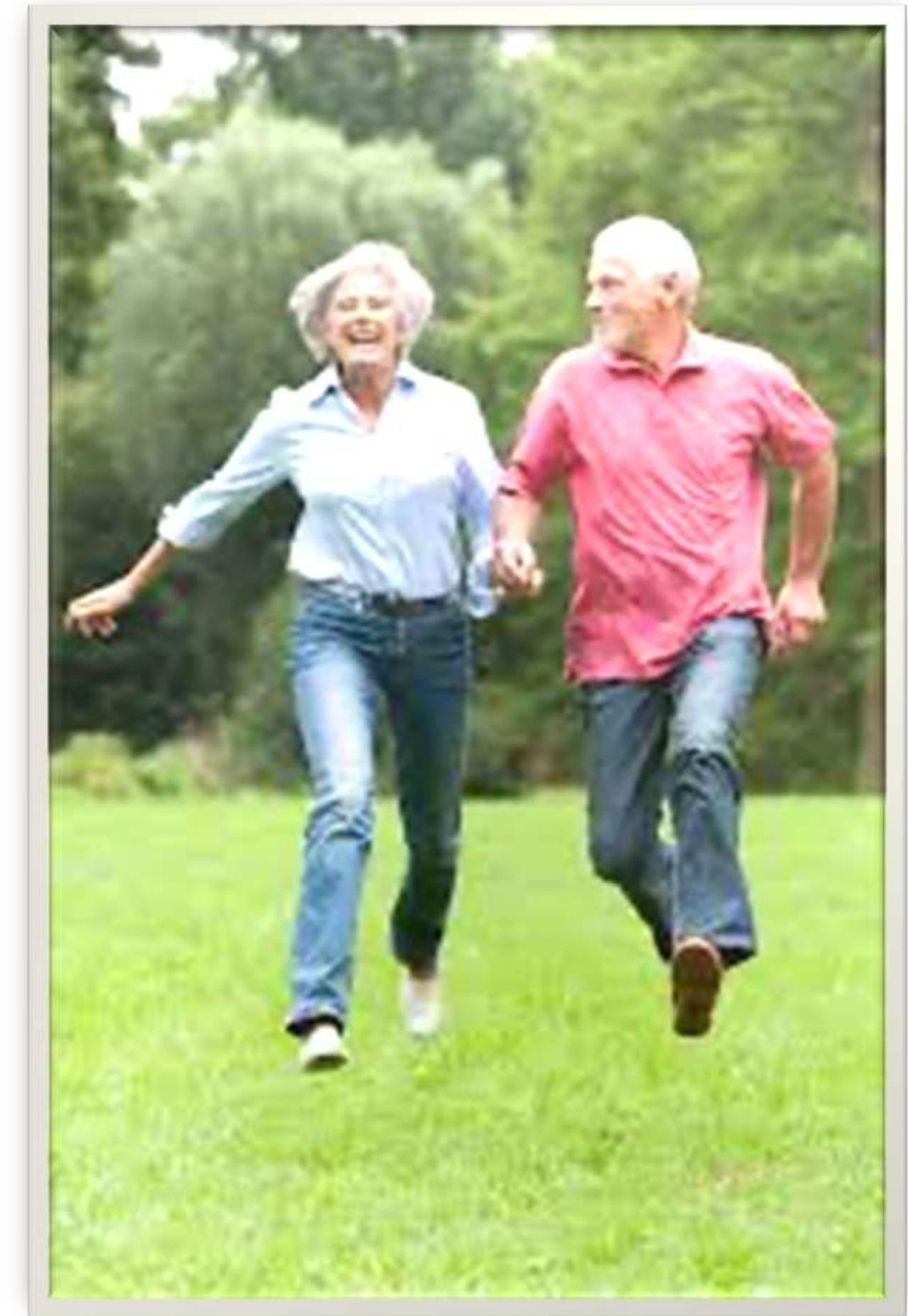
To record the current leg position, press button.

Back Main Menu

What is the Point?



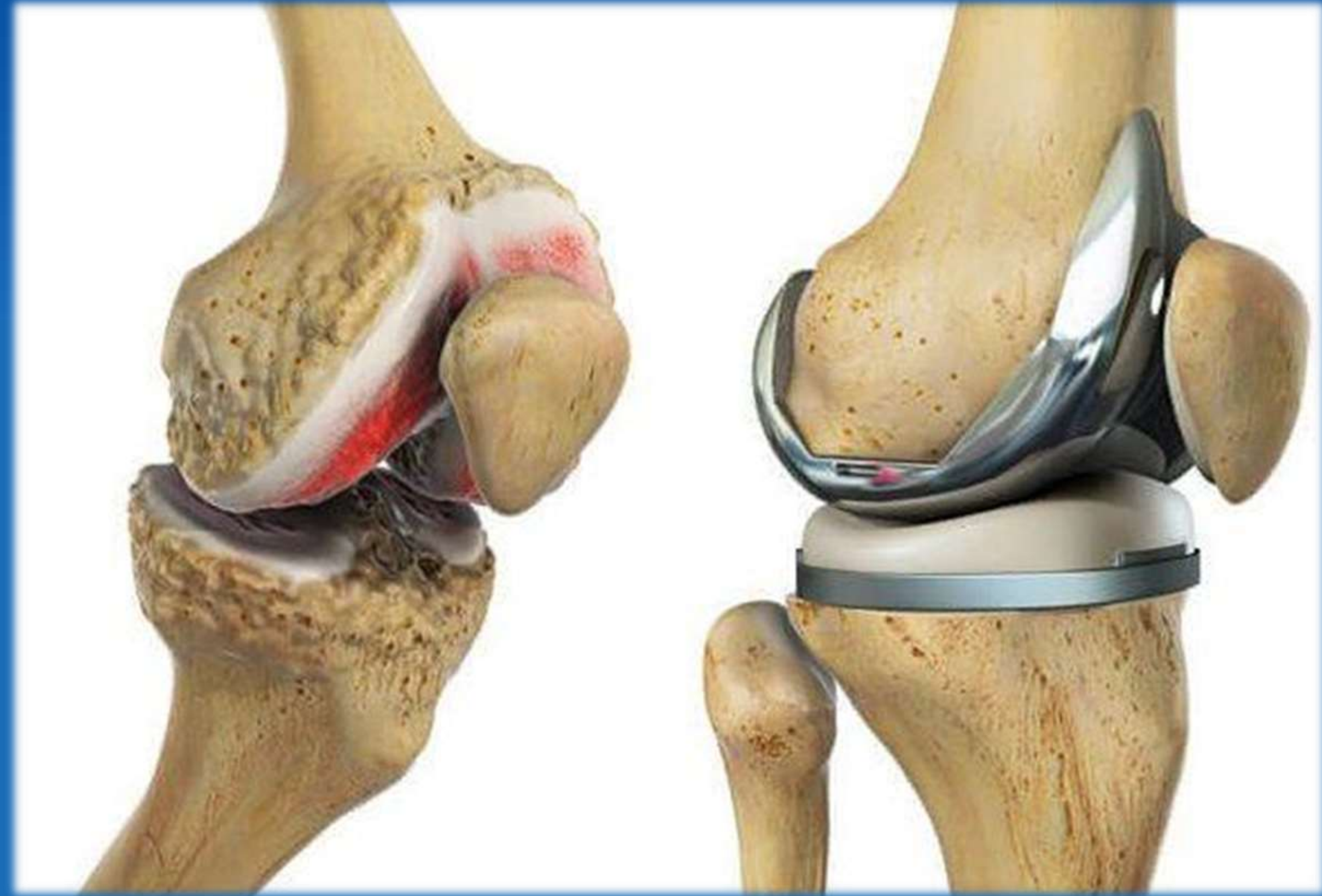
What is the Point?



The Goal is Changing



Knee Osteoarthritis Management Strategies

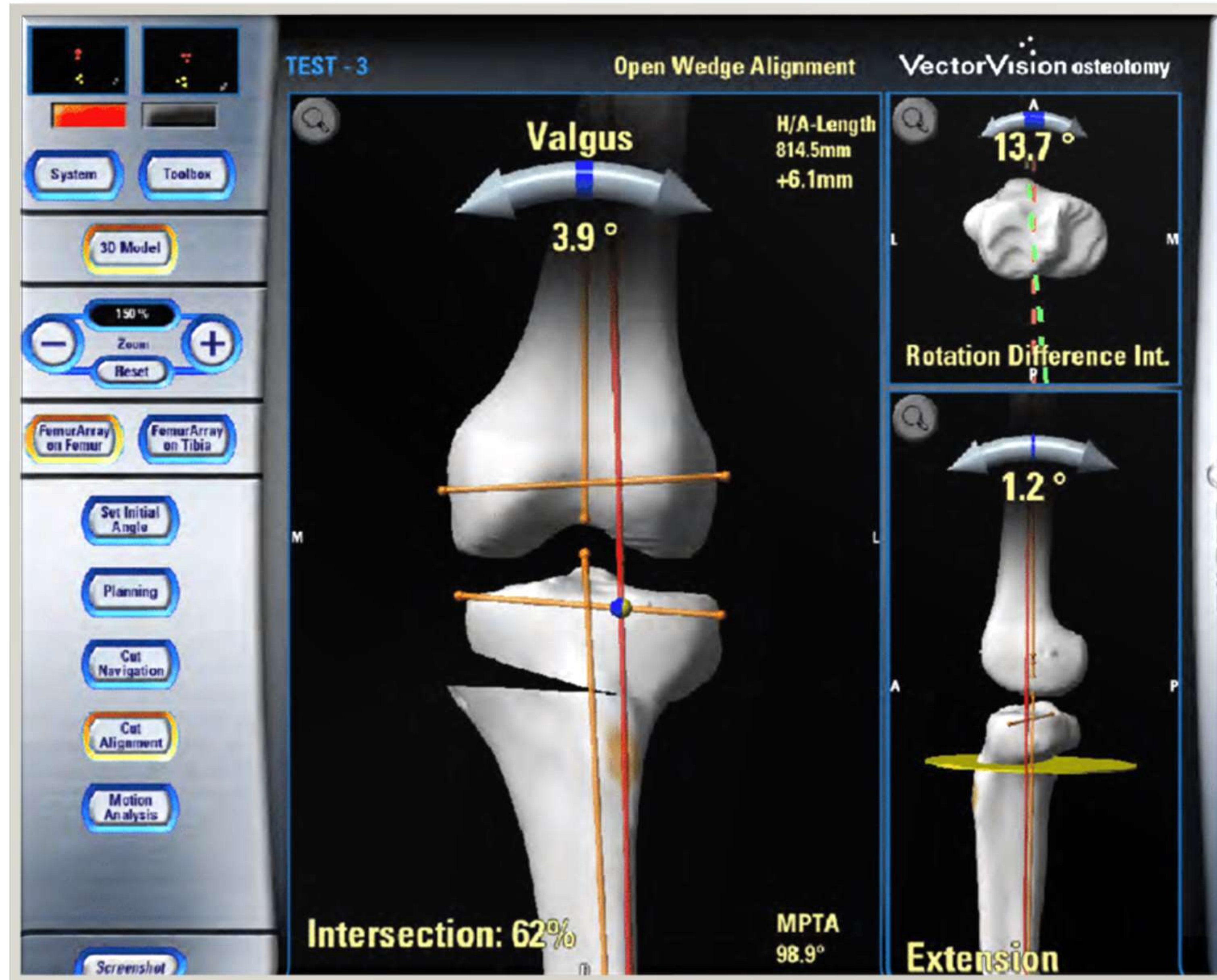


Case 1

- 55 year male
- Construction worker
- Left knee pain



Computer Navigation



3D Printing

nct

**NEWCLIP
TECHNICS**

**Innovation
around
knee
osteotomies**

HTO
High Tibial Osteotomy

**HTO
Size 2**
High Tibial Osteotomy
Available with monoplanar or
biplanar cut

PSI
High Tibial Osteotomy with
patient specific instrumentation

Medical device EC class Ib - CE 0120 505 UK -
Read labeling and instructions before use

Case 1





Case 2

- 75 year male
- Orthopaedic Professor
- Heavily involved with skiing club
- Knee pain
- Unable to ski



Case 2





Case 3

- 76 year female
- Knee pain for 3 years
- Failed conservative management





Accurate Assessment

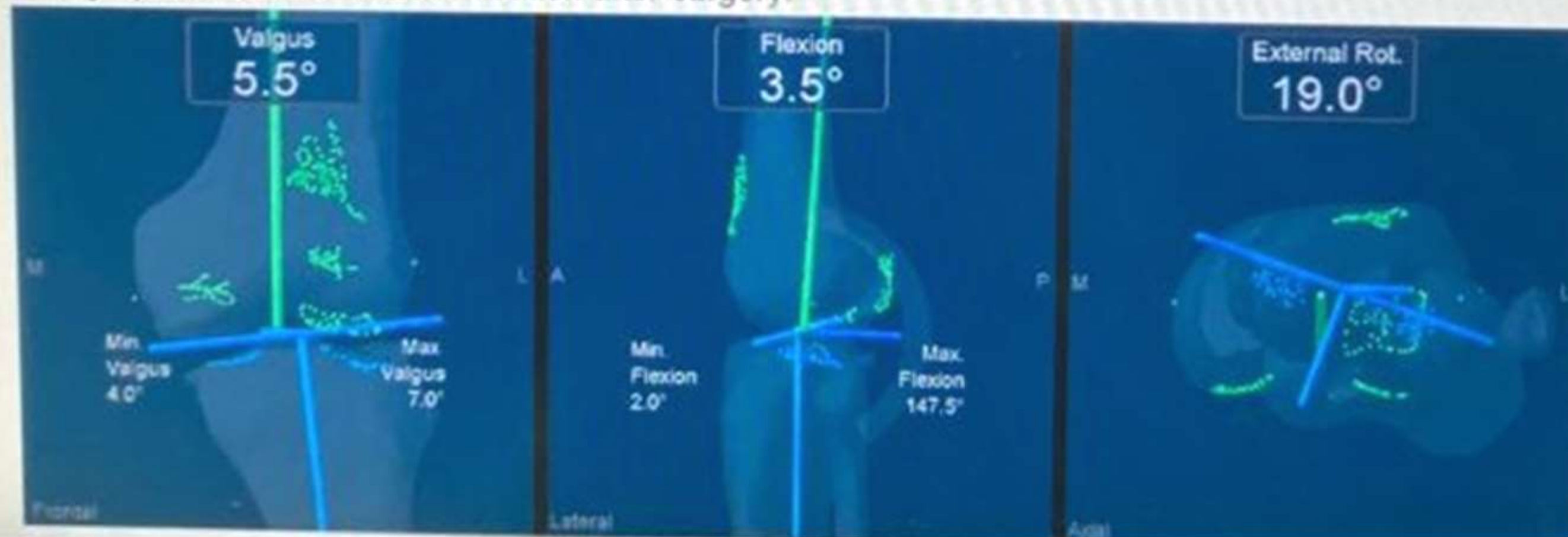
Before Surgery

This graphic shows the knee situation before surgery.



After Surgery

This graphic shows the knee situation after surgery.



Personalised Implantation Alignment

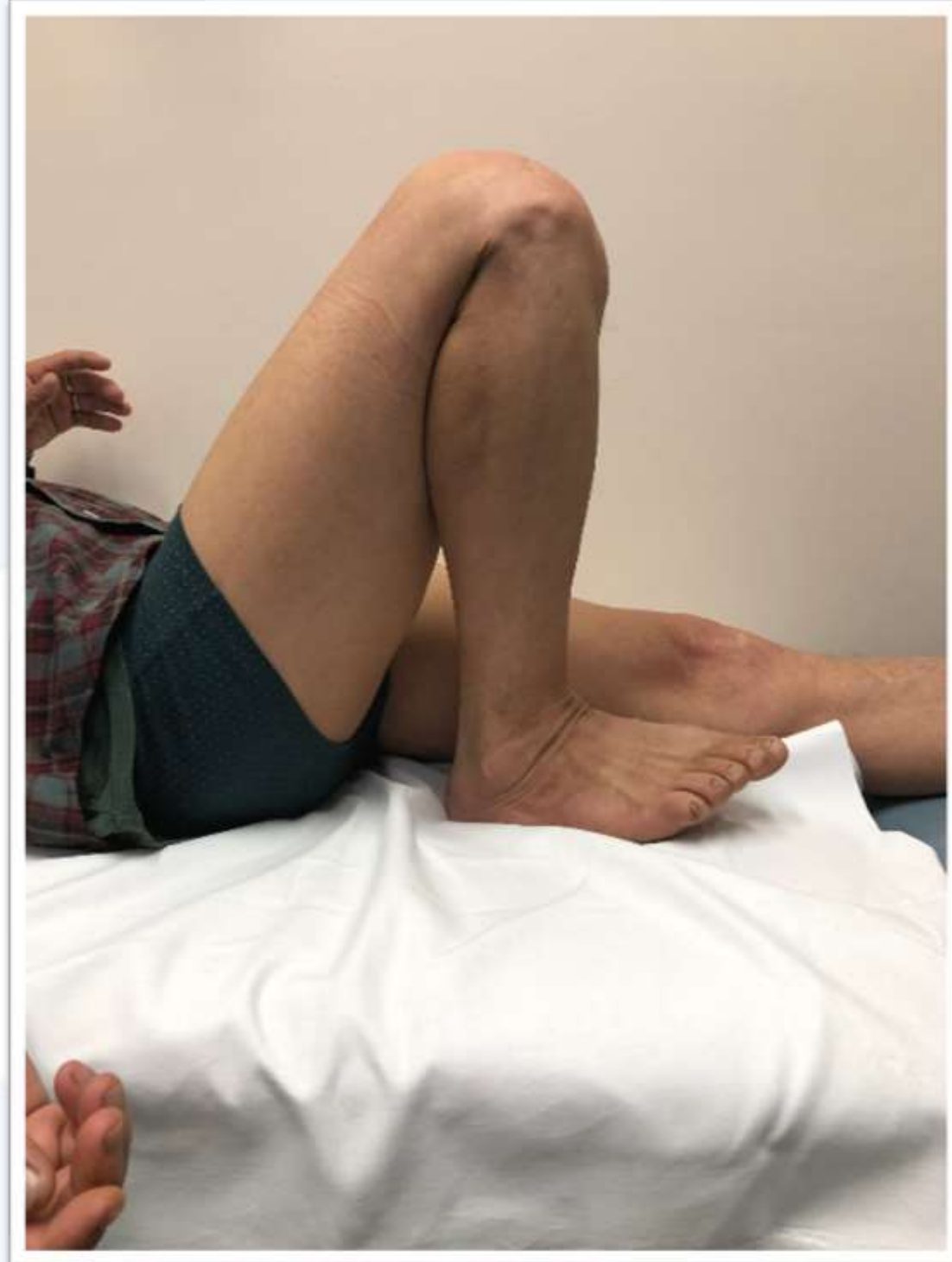


Case 5

- 47 male refugee from Nepal
- Old injury to the knee



Case 5



Case 5



Case 5





Orthosensor Verasense Technology



What's Next



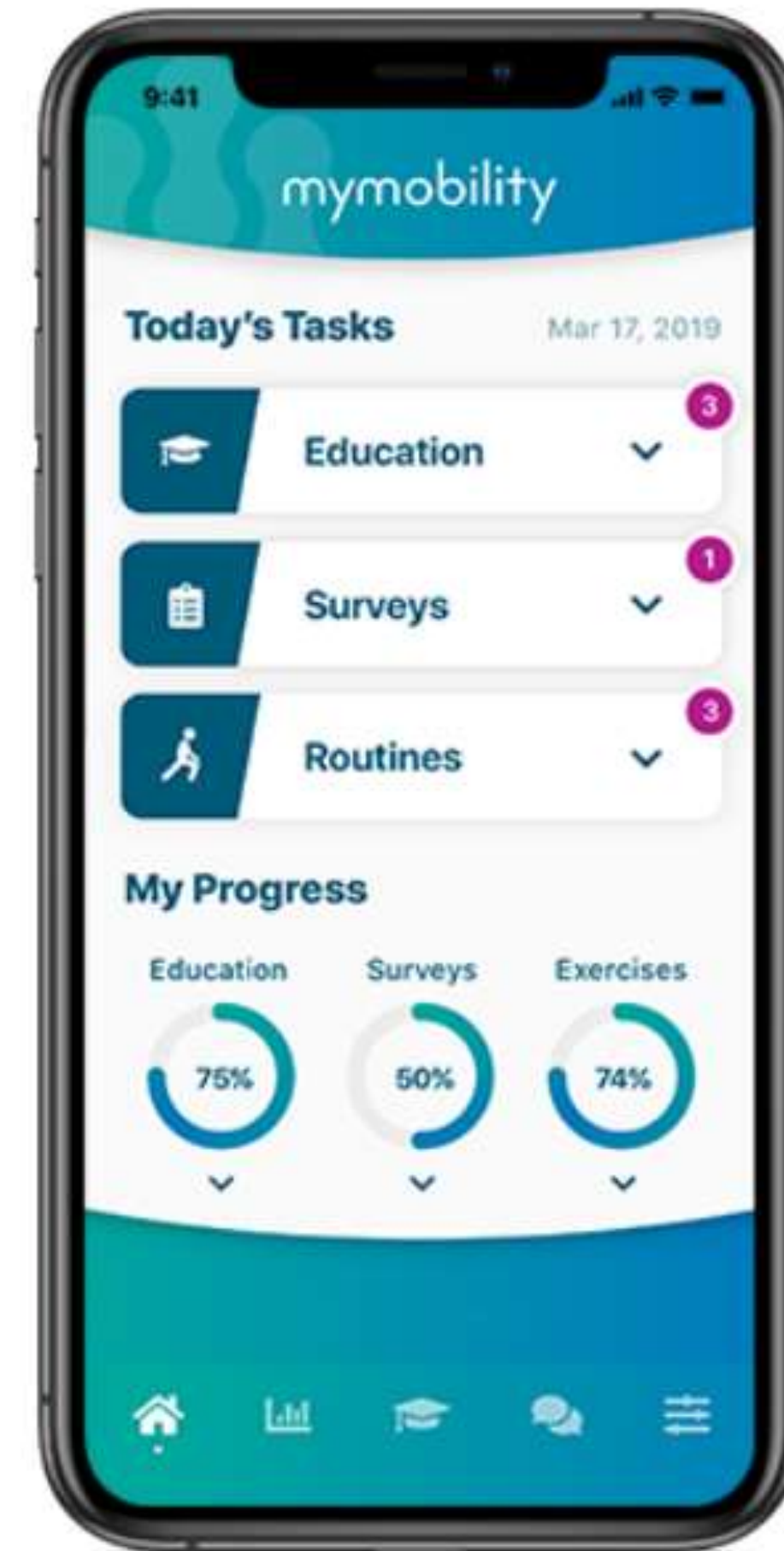
1) Participants Install the App



2) Get Convenient Reminders



3) Complete Tasks



What They Mean for Your Patient

Diagnostic tools

Preoperative evaluation (risk stratification and mitigation, implants, postoperative course)

Outcome prediction

Monitoring

Intelligent Personalised Joint Replacement

