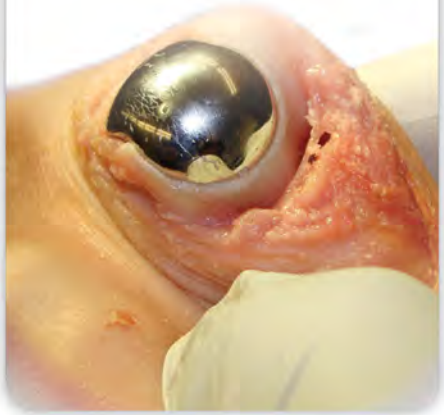
Toe HemiCAP Systems

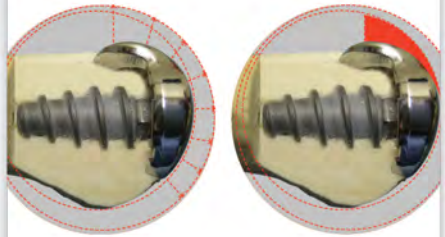
Classic, DF, ToeMotion

Toe HemiCAP Features & Benefits

Inlay arthroplasty provides stability and preserves bone

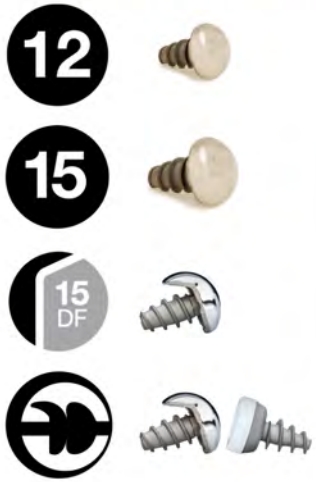


Dual curves allow for dorsal roll off and dorsal flange prevents osteophytes

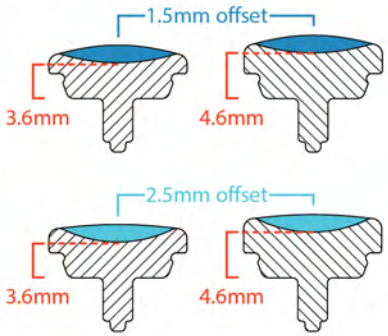


Double rock solid fixation with morse taper interlock

Multiple sizes & curvatures



Poly inserts available with multiple offsets & thicknesses



Easy & accurate instrumentation

Reference Surgeons

Dr. Carl Hasselman, Pittsburgh, PA

Dr. Brian Carpenter, Dallas, Texas

Dr. Naomi Shields, Univ of Kansas

Dr. Quinton Solomon, Dallas, TX

Dr. T. San Giovanni, Miami, FL

Dr. Chris Bromley, Poughkeepsie, NY

Dr. Alan Garrett, Dallas, TX

Dr. John Marcoux, Boston, MA

Dr. Sam Labib, Atlanta, GA

Reference Articles

Carpenter et al: Mid Term data on Met Head Resurfacing

Hasselman et al: Preliminary 5 year data with Met Head Resurfacing.

Hasselman/Shields: Resurfacing of the MTP; Tech of Foot & Ankle Surgery.

Baravarian: Treatment Dilemmas: MTP Resurfacing: Does It Have A Place In Treating Hallux Limitus/ Rigidus?

Clinical Data

- Carpenter, et.al, JFAS 2010
- 30 pts., 32 implants
- 72% grade 3 HR, 28% grade 2 HR
- Avg. f/u 27.3 mos
- No implants revised or removed
- All pts. happy with outcome & would repeat procedure
- Significant increase in AOFAS scores

The Journal of Foot & Ankle Surgery

Original Research

Surgical Treatment of Hallux Rigidus Using a Metatarsal Head Resurfacing Implant: Mid-term Follow-up

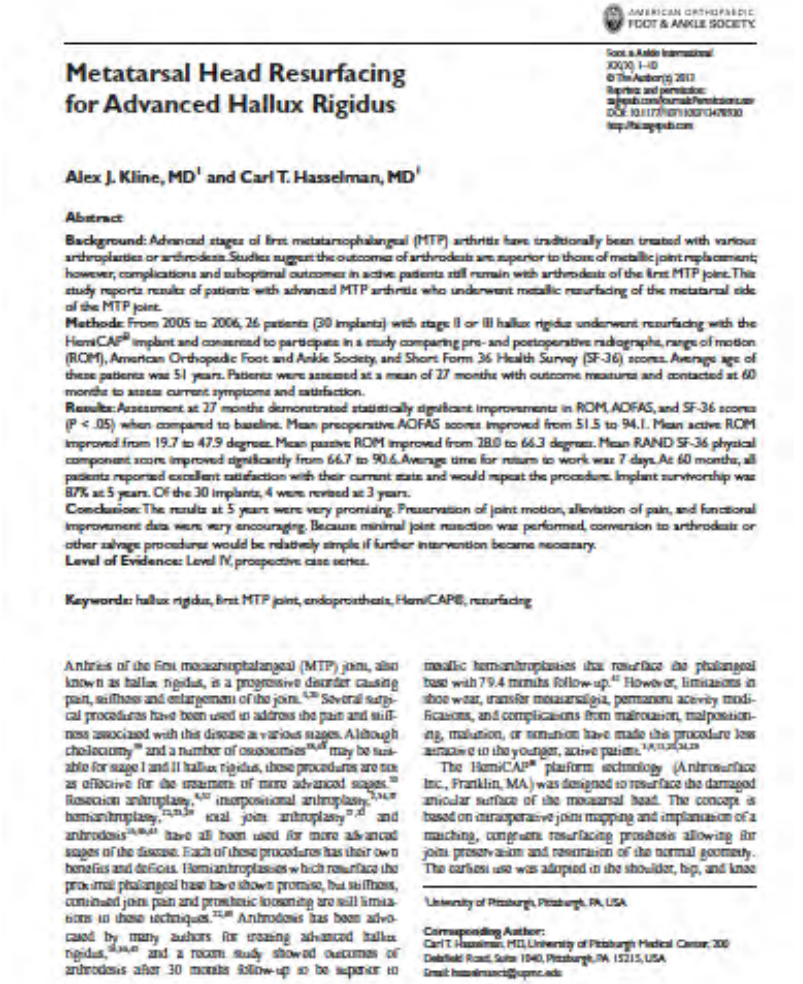
Brian Carpenter, DPM[1], Jason Smith, DPM[2], Travis Motley, DPM[3], Alan Garrett, DPM[4]

ARTICLE IN FO

ABSTRACT

Clinical Data

- Hasselman & Kline: Metatarsal Head Resurfacing for Advanced Hallux Rigidus, 2013
- 30 patients w/ 5 yr follow up
- 26 patients (30 implants) Stage II & III Hallux Rigidus
  - Mean age 51
  - Mean f/u 60 months
  - Mean active ROM 66.3 degrees
  - Mean AOFAS score 94.1
  - Average return to work – 7 days
  - Survivorship 87% @ 5 yrs



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Metatarsal Head Resurfacing for Advanced Hallux Rigidus

Alex J. Kline, MD[1] and Carl T. Hasselman, MD[1]

Abstract

Background: Advanced stages of first metatarsophalangeal (MTP) arthritis have traditionally been treated with various arthroplasties or arthrodesis. Studies suggest the outcomes of arthrodesis are superior to those of metallic joint replacement; however, complications and suboptimal outcomes in active patients still remain with arthrodesis of the first MTP joint. This study reports results of patients with advanced MTP arthritis who underwent metallic resurfacing of the metatarsal side of the MTP joint.

Methods: From 2005 to 2006, 26 patients (30 implants) with stage II or III hallux rigidus underwent resurfacing with the HemiCAP® implant and consented to participate in a study comparing pre- and postoperative radiographs, range of motion (ROM), American Orthopedic Foot and Ankle Society, and Short Form 36 Health Survey (SF-36) scores. Average age of these patients was 51 years. Patients were assessed at a mean of 27 months with outcome measures and contacted at 60 months to assess current symptoms and satisfaction.

Results: Assessment at 27 months demonstrated statistically significant improvements in ROM, AOFAS, and SF-36 scores ($P < .05$) when compared to baseline. Mean preoperative AOFAS scores improved from 51.5 to 94.1. Mean active ROM improved from 19.7 to 47.9 degrees. Mean passive ROM improved from 28.0 to 66.3 degrees. Mean RAND SF-36 physical component scores improved significantly from 66.7 to 90.6. Average time for return to work was 7 days. At 60 months, all patients reported excellent satisfaction with their current state and would repeat the procedure. Implant survivorship was 87% at 5 years. Of the 30 implants, 4 were revised at 3 years.

Conclusion: The results at 5 years were very promising. Preservation of joint motion, alleviation of pain, and functional improvement data were very encouraging. Because minimal joint resection was performed, conversion to arthrodesis or other salvage procedures would be relatively simple if further intervention became necessary.

Level of Evidence: Level IV, prospective case series.

Keywords: hallux rigidus, first MTP joint, endoprosthesis, HemiCAP®, resurfacing

Arthritis of the first metatarsophalangeal (MTP) joint, also known as hallux rigidus, is a progressive disorder causing pain, stiffness and enlargement of the joint.[6,20] Several surgical procedures have been used to address the pain and stiffness associated with this disease at various stages. Although cheilectomy[20] and a number of osteotomies[16,18] may be suitable for stage I and II hallux rigidus, these procedures are not as effective for the treatment of more advanced stages.[20] Resection arthroplasty,[4,22] interpositional arthroplasty,[3,14,19] hemiarthroplasty,[12,23,24] total joint arthroplasty[7,21] and arthrodesis[16,18,21] have all been used for more advanced stages of the disease. Each of these procedures has their own benefits and deficits. Hemiarthroplasties which resurface the proximal phalangeal base have shown promise, but stiffness, continued joint pain and prosthetic loosening are still limitations to these techniques.[22,25] Arthrodesis has been advocated by many authors for treating advanced hallux rigidus,[2,16,21] and a recent study showed outcomes of arthrodesis after 30 months follow-up to be superior to metallic hemiarthroplasties that resurface the phalangeal base with 79.4 months follow-up.[22] However, limitations in shoe wear, transfer metatarsalgia, permanent activity modifications, and complications from malunion, malpositioning, malunion, or nonunion have made this procedure less attractive to the younger, active patient.[3,9,11,20,24,25]

The HemiCAP® platform technology (Arthrosurface Inc., Franklin, MA) was designed to resurface the damaged articular surface of the metatarsal head. The concept is based on intraoperative joint mapping and implantation of a matching, congruent resurfacing prosthesis allowing for joint preservation and restoration of the normal geometry. The earliest use was adopted in the shoulder, hip, and knee

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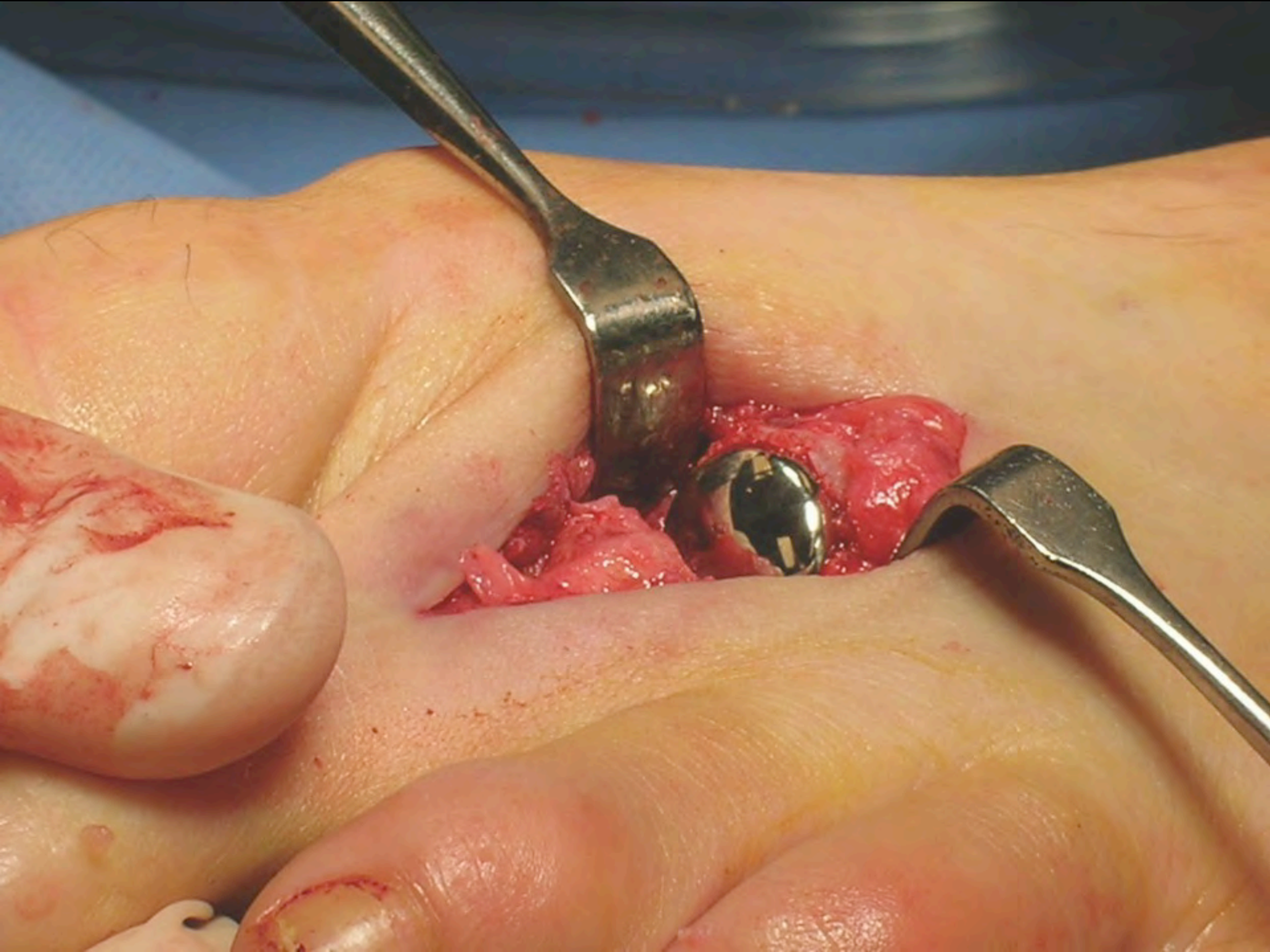
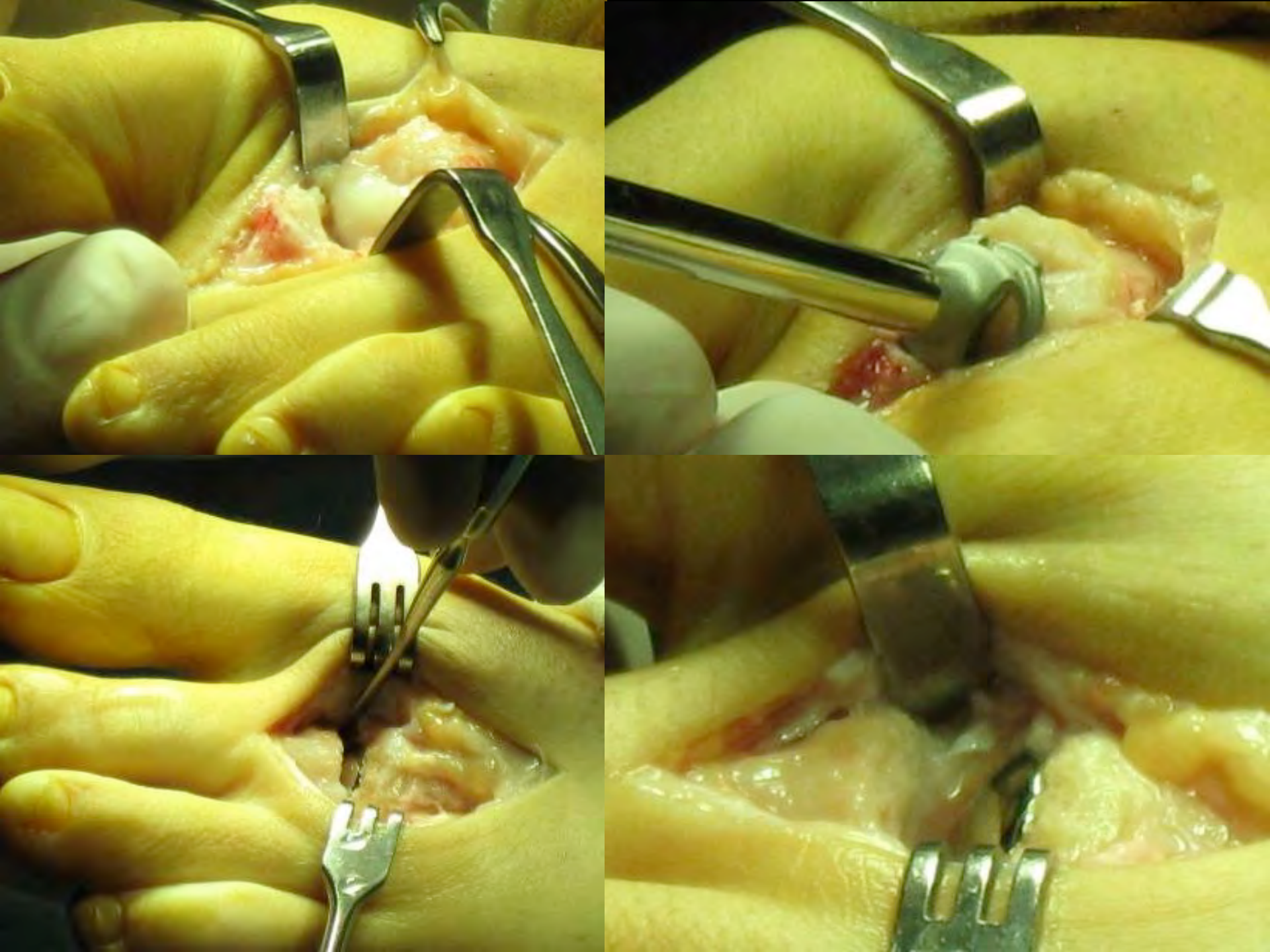
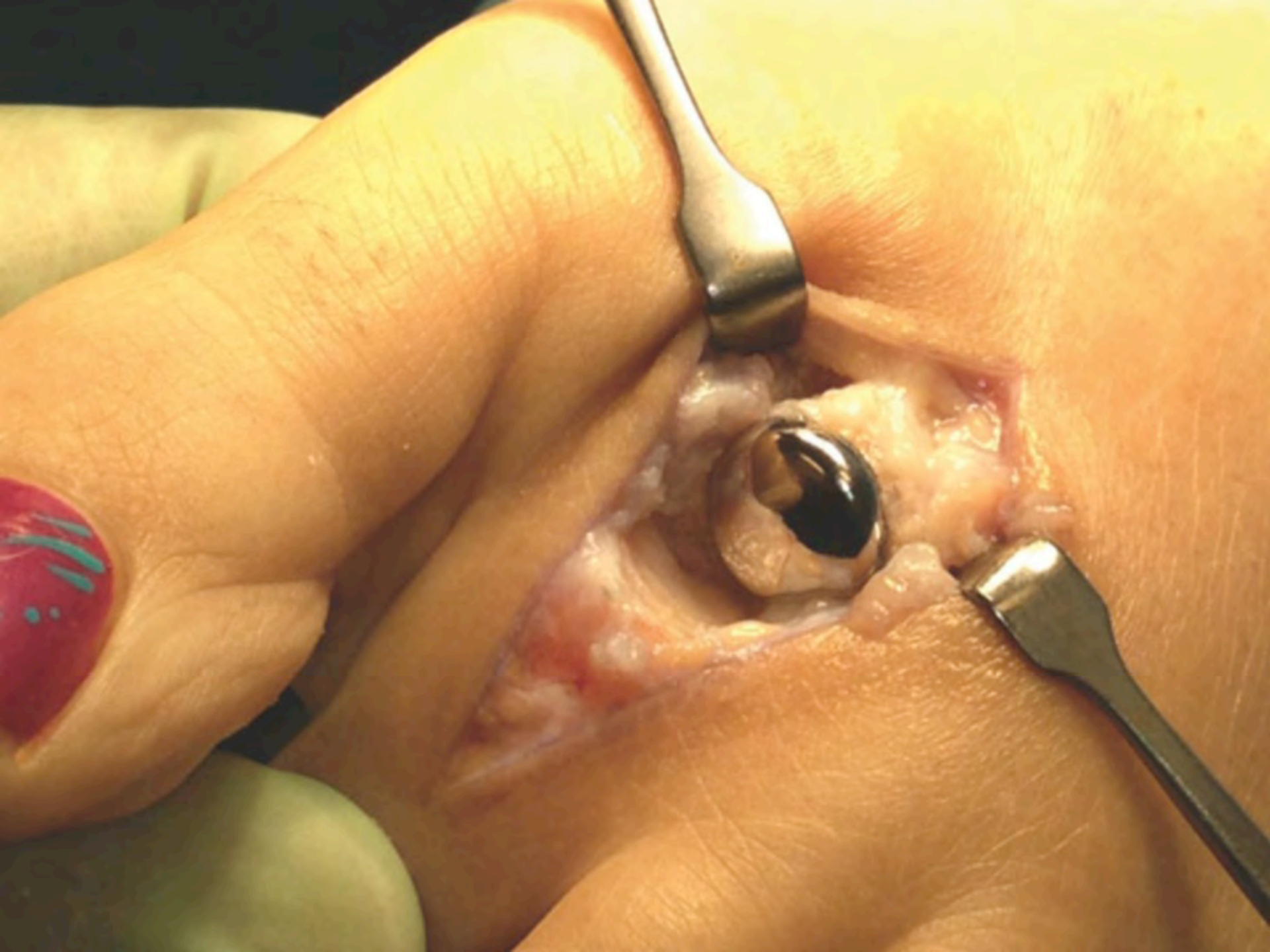
Toe Classic HemiCAP:

Lesser Metatarsals





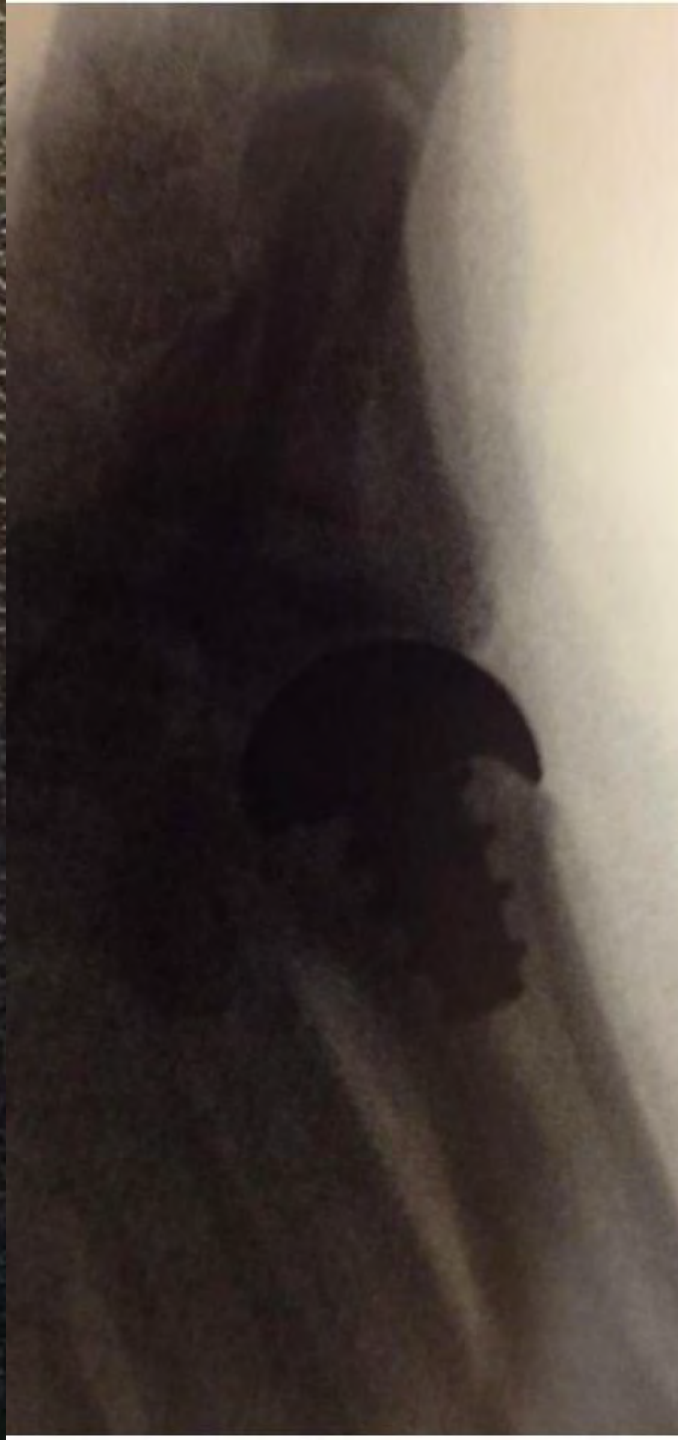


HemiCAP DF:

1st Metatarsal

6 mo Post Op Radiograph





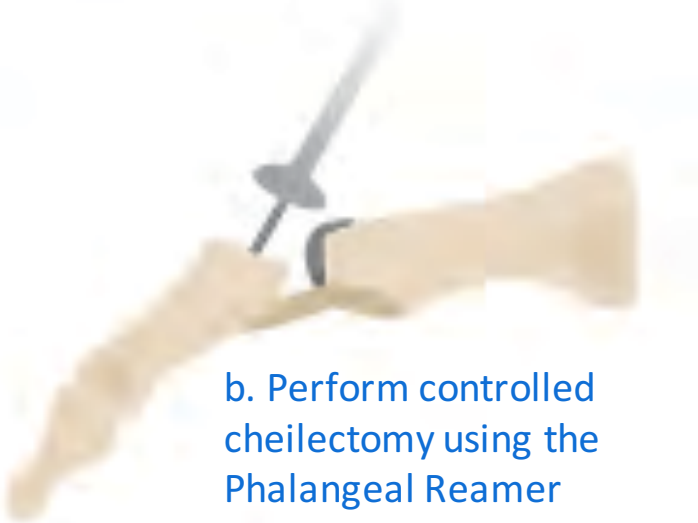

5mm


15mm


9M59-1035
3.5MM

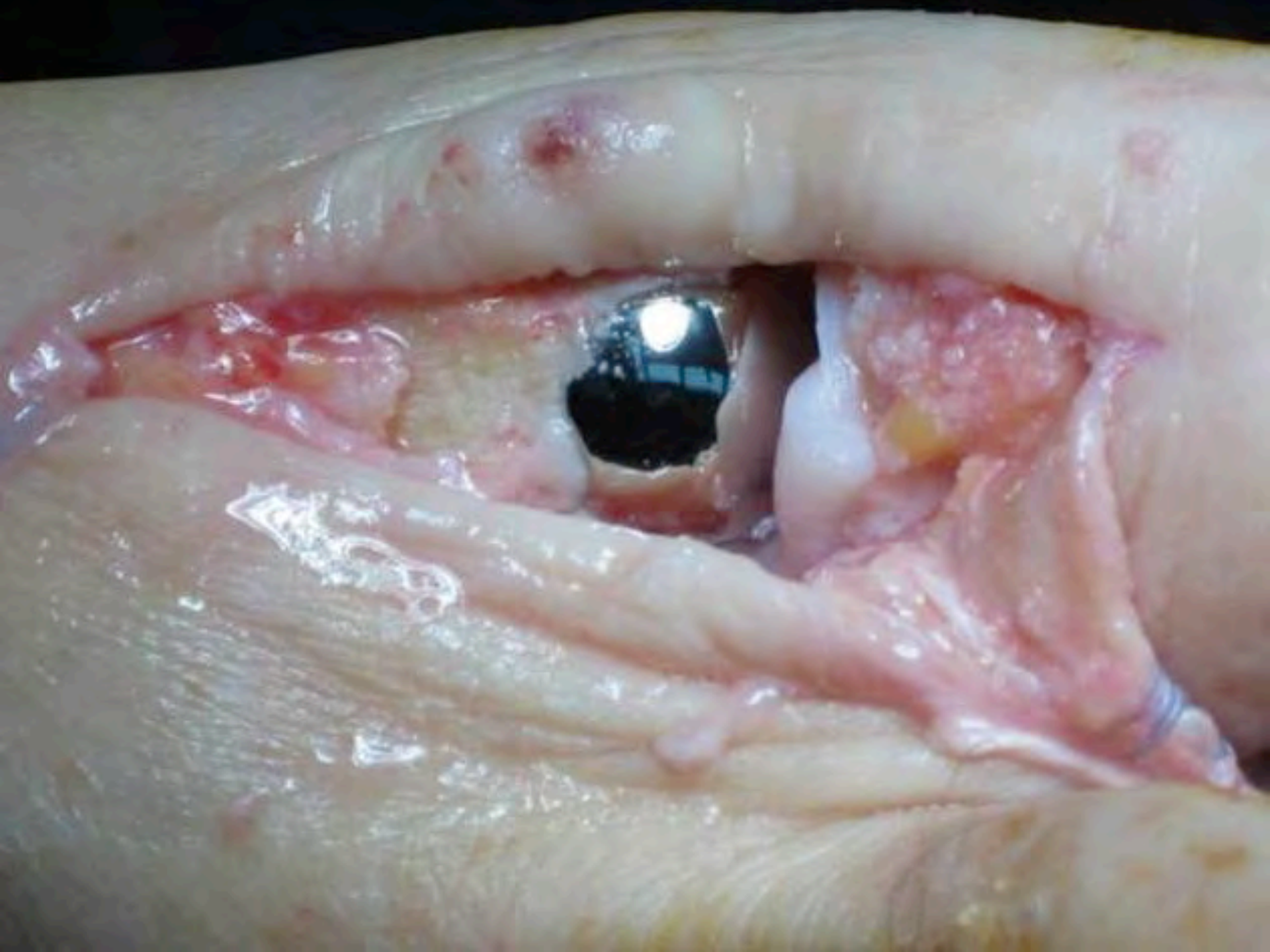
Phalangeal Reamer

a. Place Guide Pin into phalanx



b. Perform controlled cheilectomy using the Phalangeal Reamer

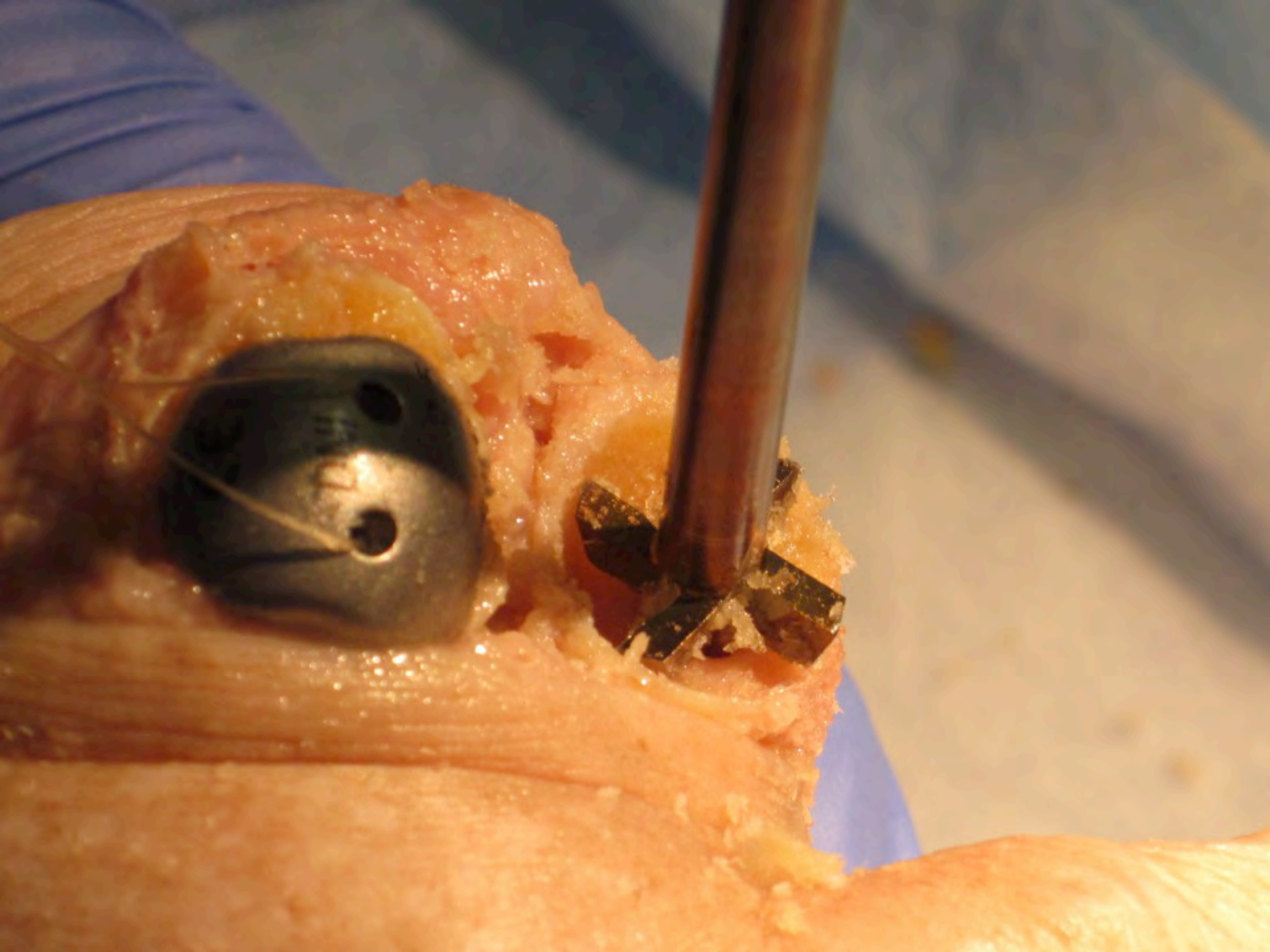
c. Final phalangeal cheilectomy

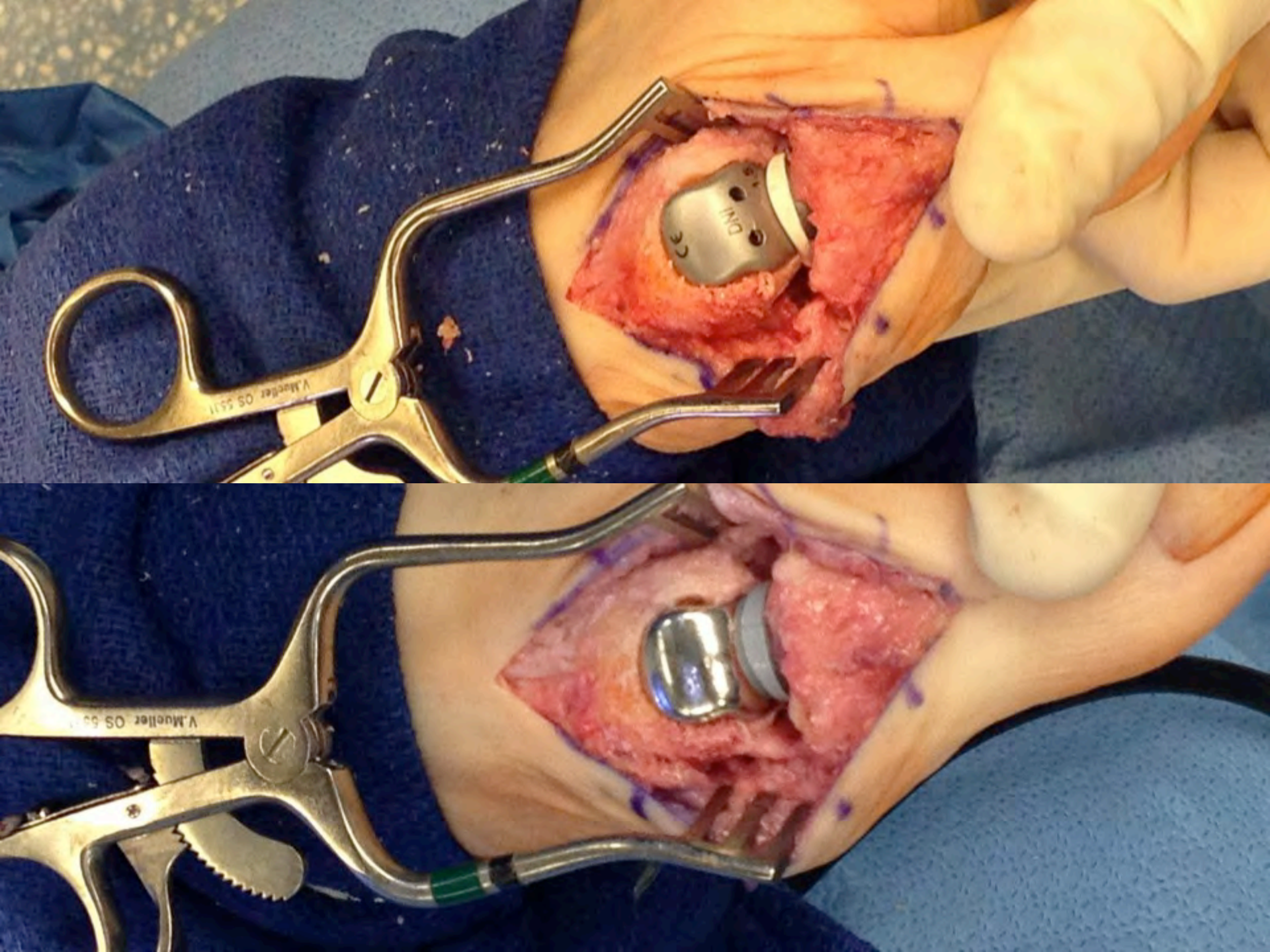


arthrosurface®

ToeMotion:

Total Toe Restoration




V.Mueller OS 6511
DNI

arthrosurface®

Post Operative Protocol

- Weight bearing as tolerated day 1
- Ice/elevate leg as much as possible for swelling
- Active ROM to begin on day 1
- First follow up in 2 weeks:
- Remove dressing
- Regular shoes as tolerated
- Begin passive ROM and PT if necessary