

dualPortal Endoscopic Spine Surgery – ULBD: Principles, Anatomy, Workflow

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Board Certified Ortho Spine

Double Fellowship Trained

Clinical Assistant Professor University of Arizona

Banner Health



Disclosures

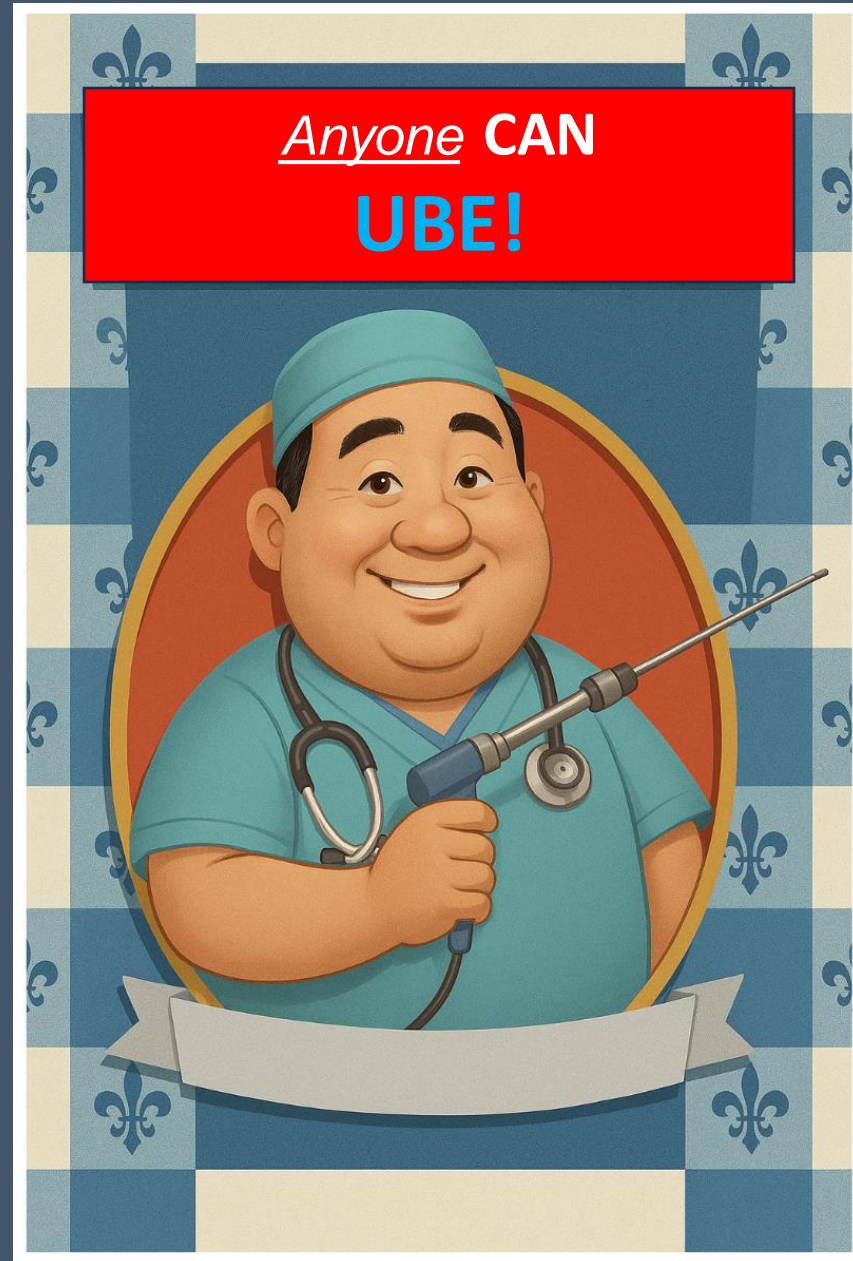
Amplify – consultant

Medtronic – consultant

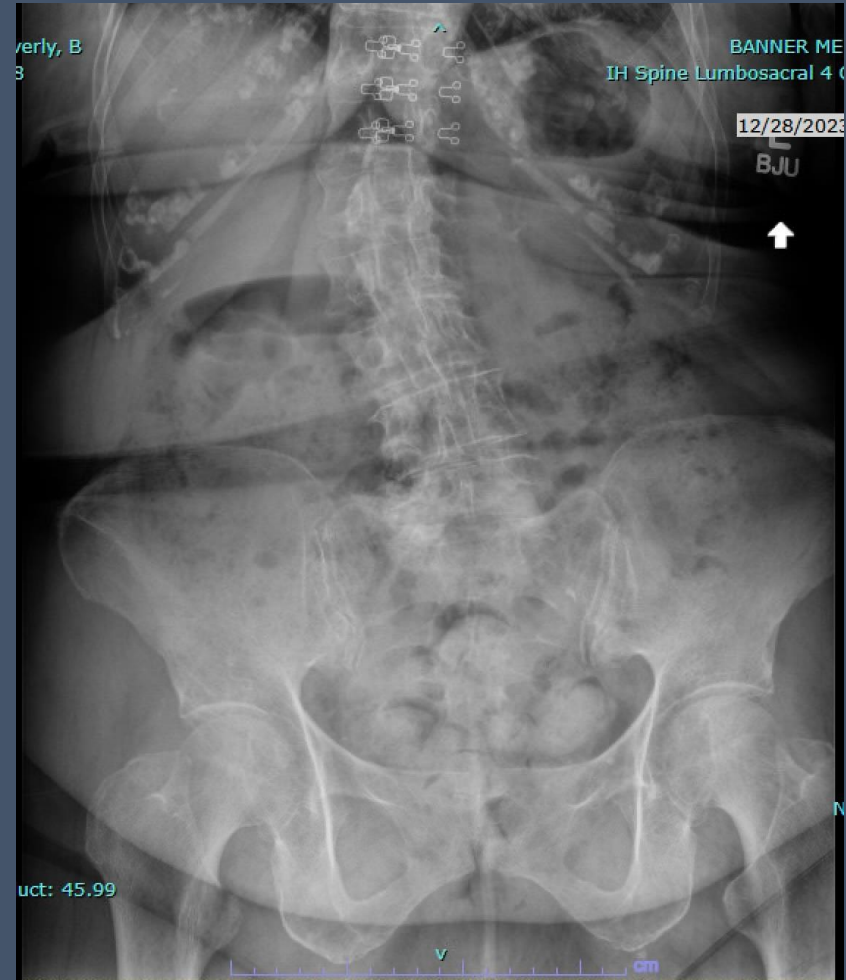
SI-Bone – consultant

Spinal Elements – consultant

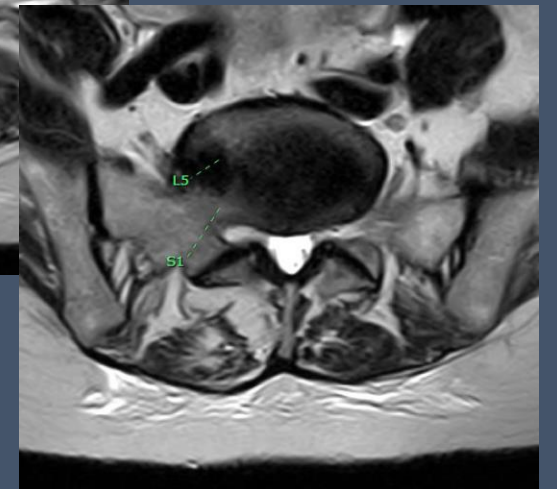
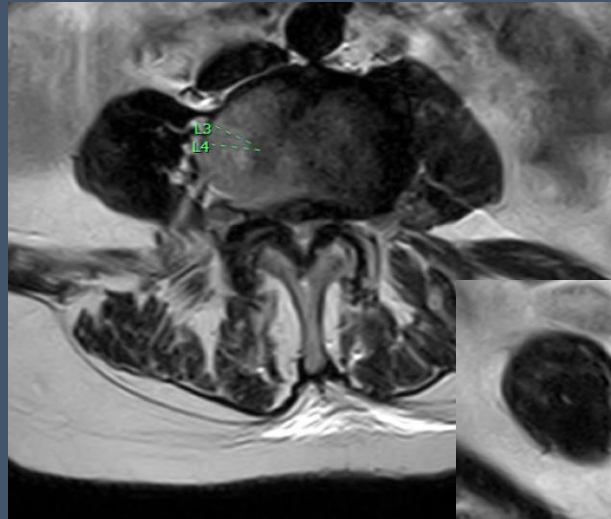
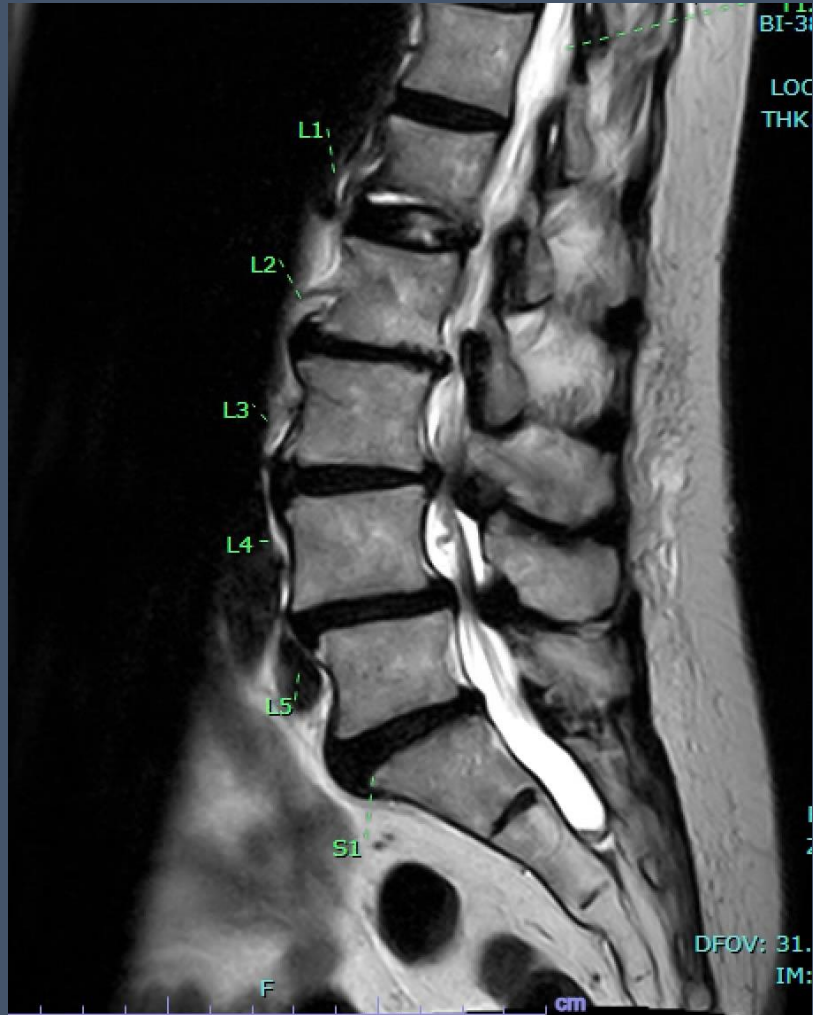
LnK - consultant



Almost nondegenerative, NC > S1 radiculopathy > LBP,
High Functioning, No significant Comorbs



Almost nondegenerative, NC > S1 radiculopathy > LBP,
High Functioning, No significant Comorbs



What would you do?

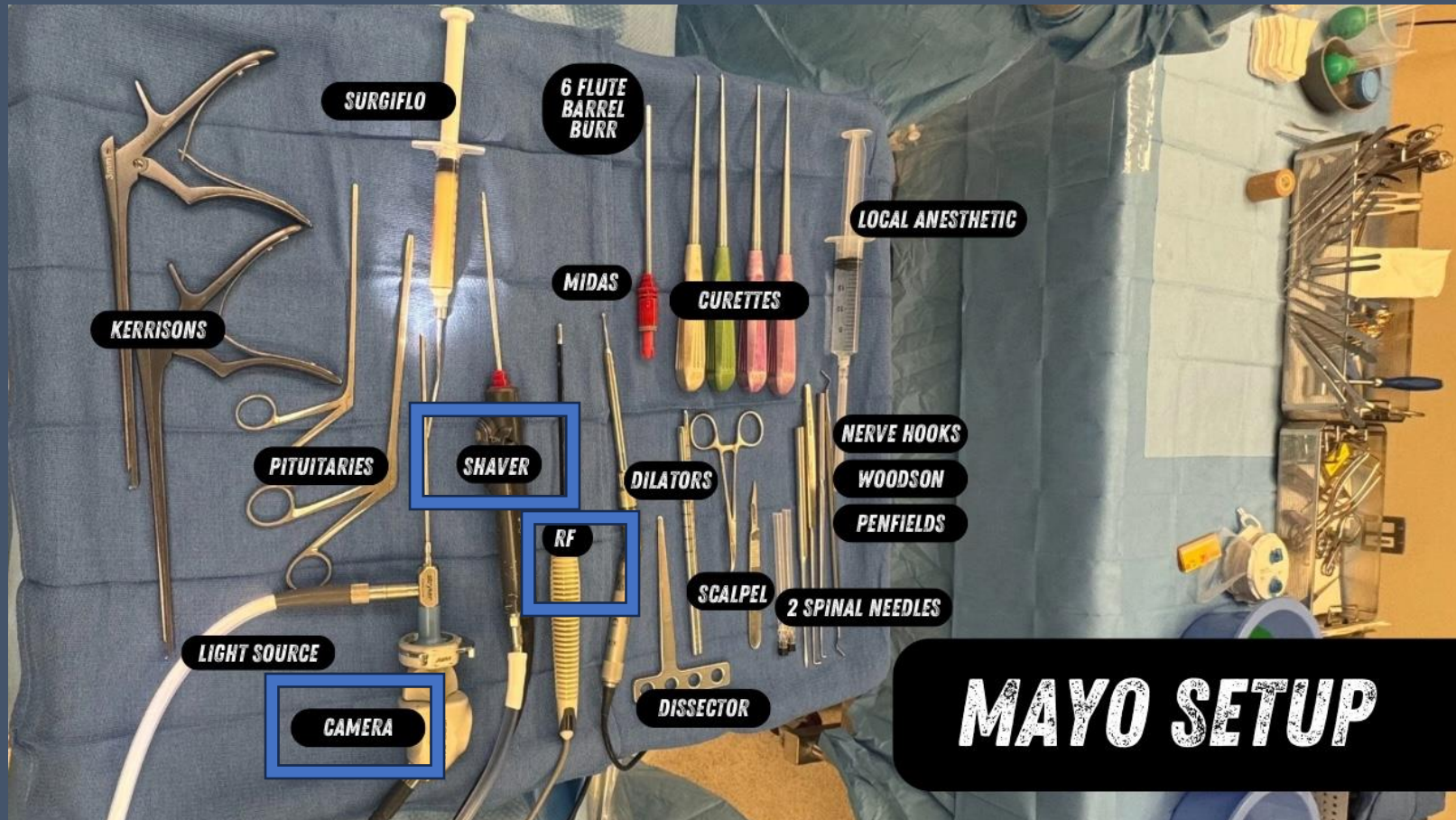


Not Actual Patient – Stock Photo of “Sweet Old Lady”

Before You ULBD *Master the Fundamentals*



Fundamental Of UBE *Instrumentation*



Arthroscopic Camera (0 or 30 degree)

Arthroscopic Shaver / Burr
6 flute barrel burr

Radiofrequency (RF) Wand
90 degree

Fundamental Of UBE

Hemostasis / Fluid Management

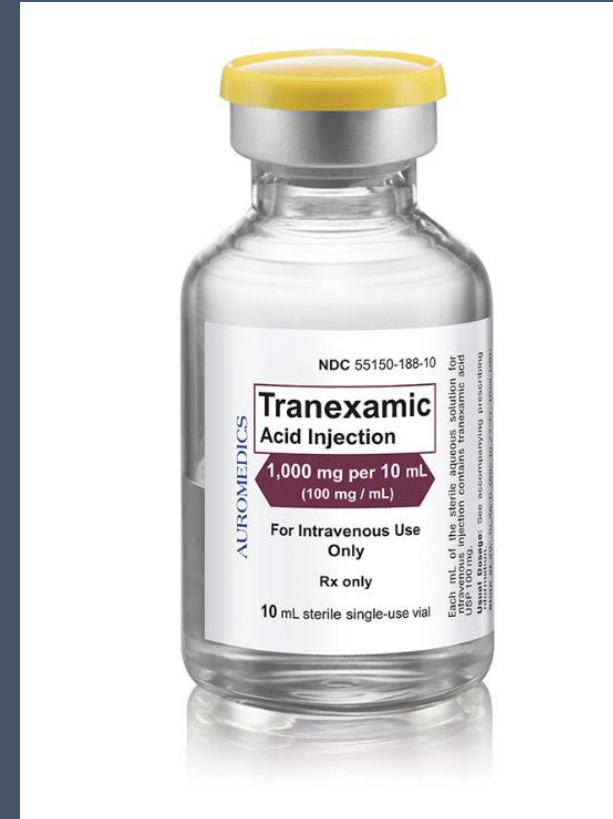
“STOP [bleeding] BRO”

- **S:** Scraper / Shaver
- **T:** TXA / Thrombin
- **O:** Outflow
- **P:** Pressor and Pressure

- **B:** Bone Wax / Burr
- **R:** RFA
- **O:** Obstruction

T: Tranexamic Acid / Thrombin

- Inc. visibility
 - Possible decrease post-op pain? Hematoma?
- Safe & minimal complications
- CI: active clotting, SAH, hypersensitivity



Review > [Eur Spine J.](#) 2013 Sep;22(9):1950-7. doi: 10.1007/s00586-013-2774-9. Epub 2013 May 9.

Is tranexamic acid effective and safe in spinal surgery? A meta-analysis of randomized controlled trials

Zhi-Jun Li¹, Xin Fu, Dan Xing, Hua-Feng Zhang, Jia-Cheng Zhao, Xin-Long Ma

Affiliations + expand
PMID: 23657623 PMCID: PMC377050 DOI: 10.1007/s00586-013-2774-9

Meta-Analysis > [Spine J.](#) 2015 Apr 1;15(4):752-61. doi: 10.1016/j.spinee.2015.01.013. Epub 2015 Jan 21.

Efficacy of tranexamic acid on surgical bleeding in spine surgery: a meta-analysis

Thomas Cherlyan¹, Stephen P Maier 2nd², Kristina Bianco², Kseniya Slobodyanyuk², Rachel N Rattenni², Virginie Lafage², Frank J Schwab², Baron S Lonner², Thomas J Errico²

Affiliations + expand
PMID: 25617507 DOI: 10.1016/j.spinee.2015.01.013

Review > [Arthroscopy.](#) 2022 Apr;38(4):1366-1377.e9. doi: 10.1016/j.arthro.2021.10.001. Epub 2021 Oct 14.

Tranexamic Acid Administration in Arthroscopic Surgery Is a Safe Adjunct to Decrease Postoperative Pain and Swelling: A Systematic Review and Meta-analysis

Kyle Goldstein¹, Conor Jones¹, Jeffrey Kay², Jason Shin³, Darren de Sa⁴

Affiliations + expand
PMID: 34655767 DOI: 10.1016/j.arthro.2021.10.001

Arthroscopy. 2021 Apr;37(4):1323-1333. doi: 10.1016/j.arthro.2020.11.051. Epub 2020 Dec 2.

Tranexamic Acid Use in Knee and Shoulder Arthroscopy Leads to Improved Outcomes and Fewer Hemarthrosis-Related Complications: A Systematic Review of Level I and II Studies

John W Beik¹, Eric C McCarty², Darby A Houck², Jason L Drago², Felix H Savoie³, Stephen G Thon²

Affiliations + expand
PMID: 33278534 DOI: 10.1016/j.arthro.2020.11.051

Randomized Controlled Trial > [Arthroscopy.](#) 2024 May;40(5):1409-1410. doi: 10.1016/j.arthro.2023.10.019. Epub 2023 Oct 27.

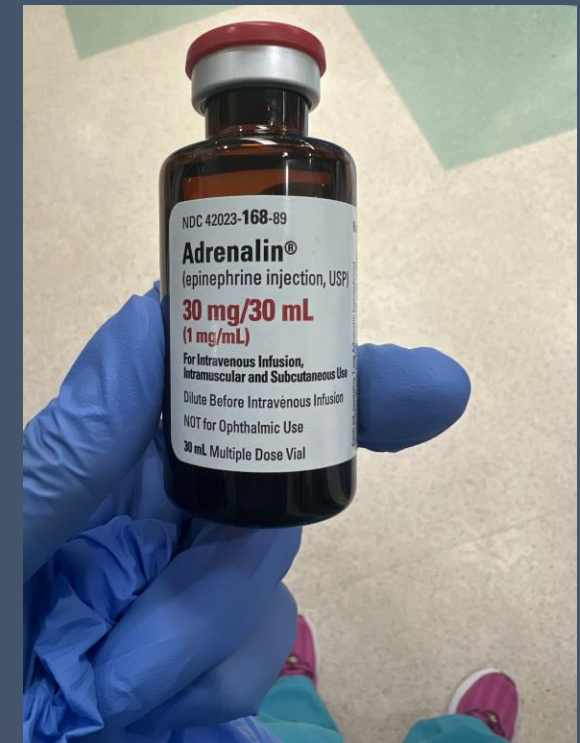
Intravenous Tranexamic Acid Improves Visual Clarity During Synovectomy in Patients Undergoing Arthroscopic Rotator Cuff Repair: A Double-Blind, Randomized Controlled Study

Hyoun Ju Shin¹, Hae Sun You¹, Kaehong Lee¹, Lee Gyeong Je¹, Seul Gi Kim², Kyung-Sook Yang³, Woong Kyo Jeong⁴

Affiliations + expand
PMID: 37890542 DOI: 10.1016/j.arthro.2023.10.019

P: Pressors, Pressure

- Epinephrine in irrigation
 - 0.33mg - 1mg / L
 - Rare risk of AE (arthroscopic literature)
- Hypotensive Anesthesia
 - **MAP of 60-65 mm Hg**
 - <60 → AKI, cerebral desaturation, ocular perfusion issues
 - Systolic BP 90-100



[Home](#) > [International Orthopaedics](#) > [Article](#)

Epinephrine in irrigation fluid for visual clarity in arthroscopic shoulder surgery: a systematic review and meta-analysis

Original Paper | Published: 22 June 2018

Volume 42, pages 2881–2889, (2018) [Cite this article](#)

> [Arthroscopy](#). 2011 Jul;27(7):889-94. doi: 10.1016/j.arthro.2011.02.027. Epub 2011 May 28.

Effects of beach-chair position and induced hypotension on cerebral oxygen saturation in patients undergoing arthroscopic shoulder surgery

Jae Hoon Lee ¹, Kyeong Tae Min, Yong-Min Chun, Eun Jung Kim, Seung Ho Choi

Affiliations + expand

PMID: 21620637 DOI: 10.1016/j.arthro.2011.02.027

> [J Bone Joint Surg Am](#). 2012 Jul 18;94(14):1284-90. doi: 10.2106/JBJS.J.01550.

The safety of controlled hypotension for shoulder arthroscopy in the beach-chair position

Robert Gillespie ¹, Yousef Shishani, Jonathan Streit, J P Wanner, Christopher McCrum, Tanvir Syed, Adam Haas, Reuben Gobeze

Affiliations + expand

PMID: 22810398 DOI: 10.2106/JBJS.J.01550

 Arthroscopy: The Journal of Arthroscopic & Related Surgery
Volume 32, Issue 3, March 2016, Pages 436-444

Original Article With Video Illustration

Epinephrine Diluted Saline-Irrigation Fluid in Arthroscopic Shoulder Surgery: A Significant Improvement of Clarity of Visual Field and Shortening of Total Operation Time. A Randomized Controlled Trial

Douwe O. van Montfoort M.D. ¹, ², Paulien M. van Kampen Ph.D., Pol E. Huijsmans M.D.

Fundamental Of UBE

Localization



Fundamental Of UBE
Working Portal / Space

Establish the Working Portal

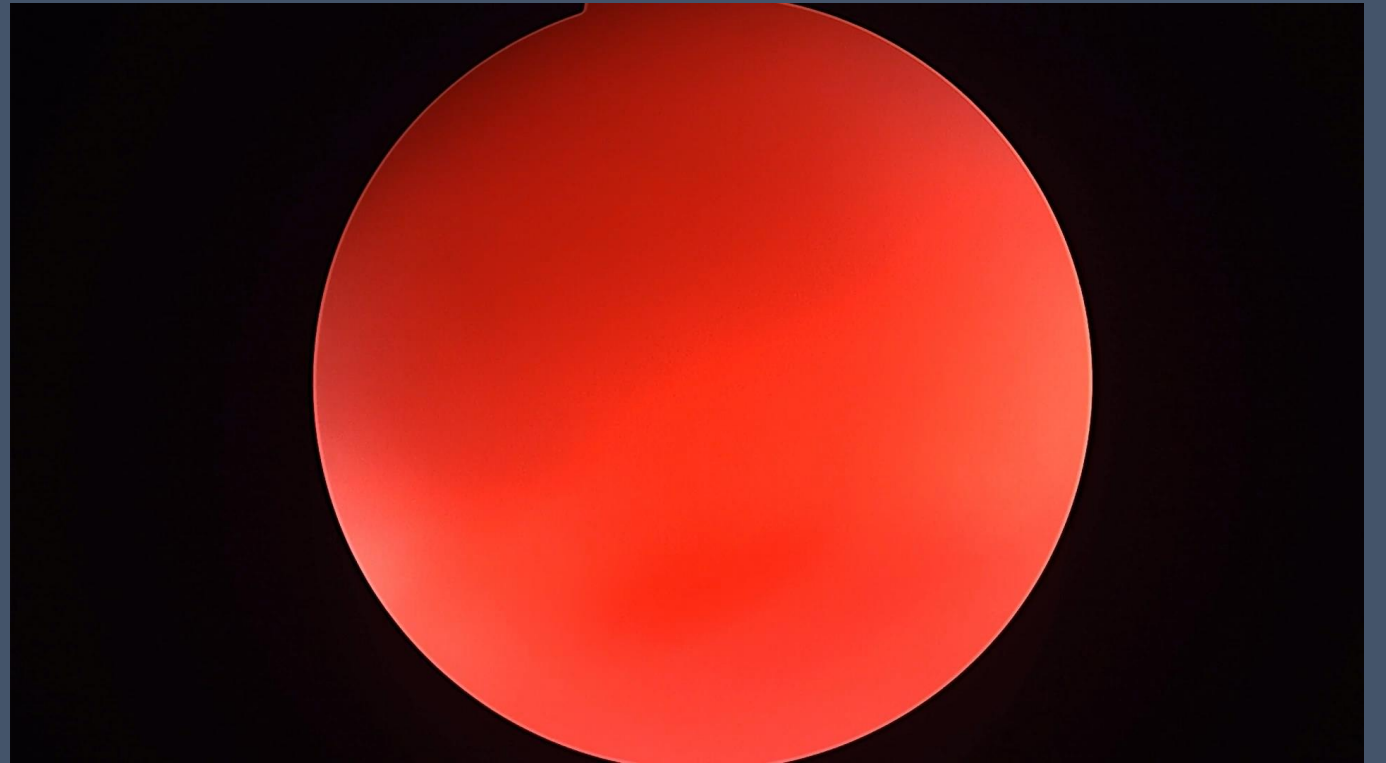


Establish your “Pocket”

- Shaver or RF
 - “Touch Tips”



Quickly creates the “Pocket”

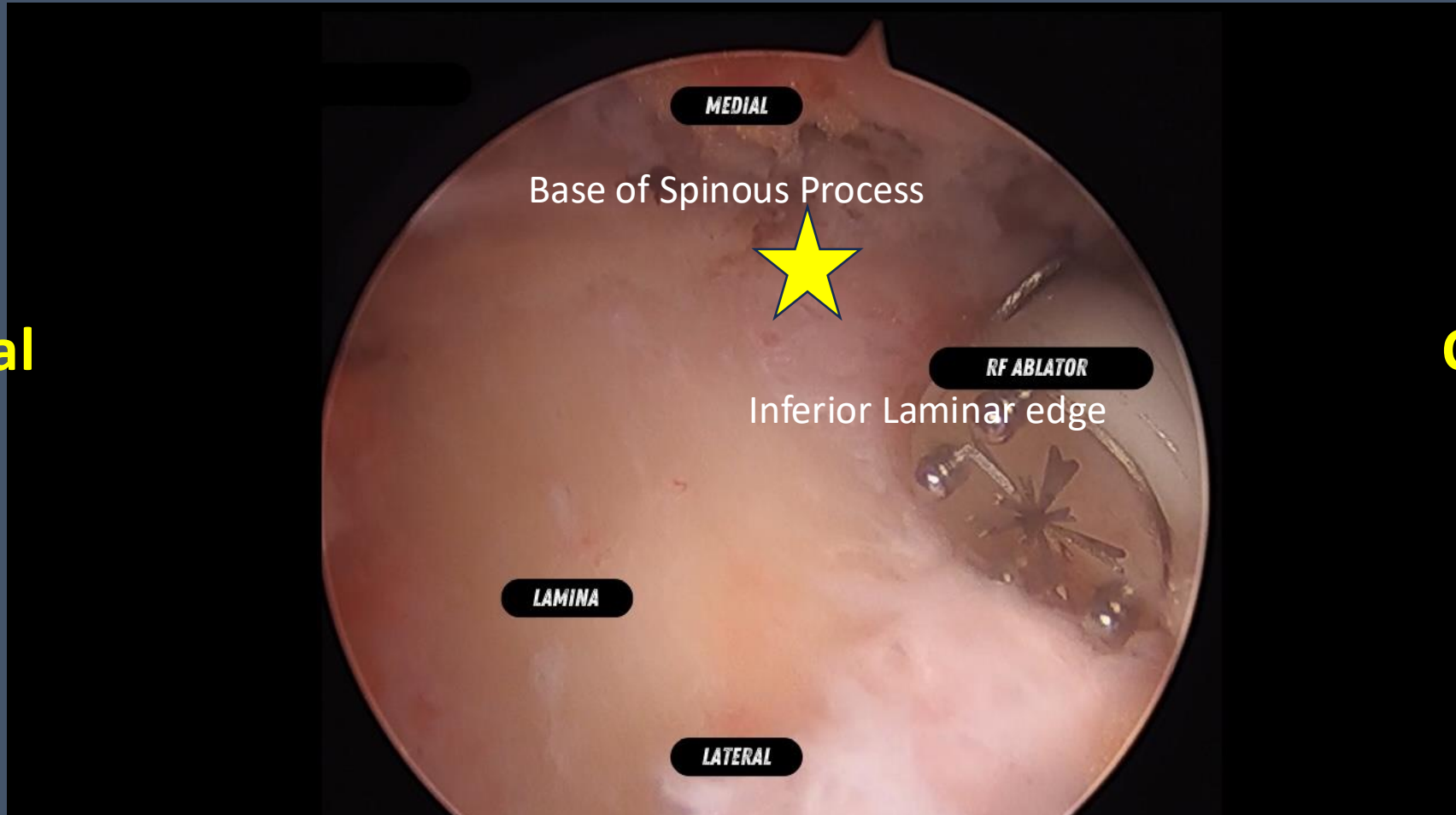


Fundamental Of UBE
Understand your Anatomy

Know Your Anatomy

Cranial

Caudal



Pars

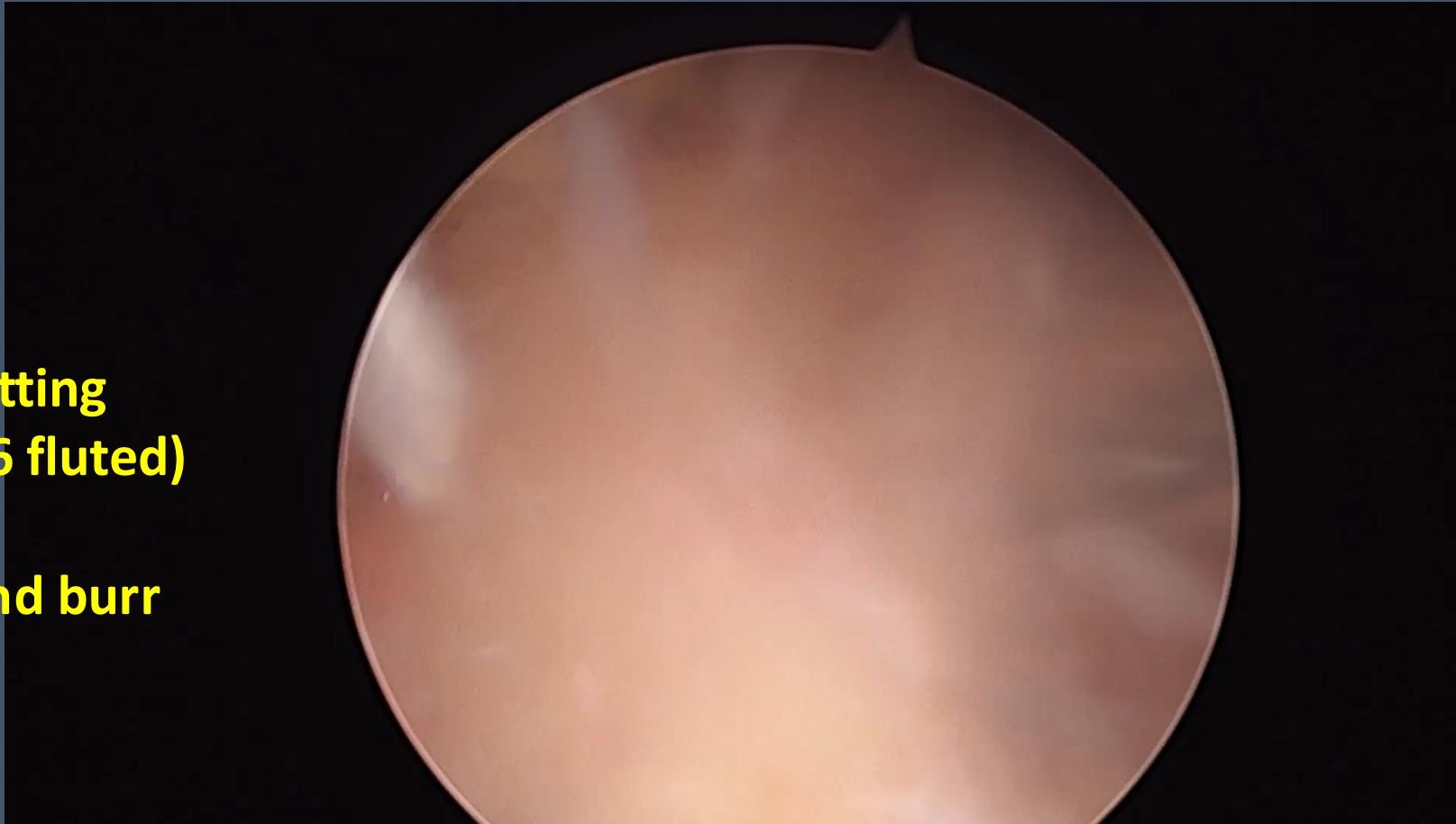
Surgeon

ULBD Procedure

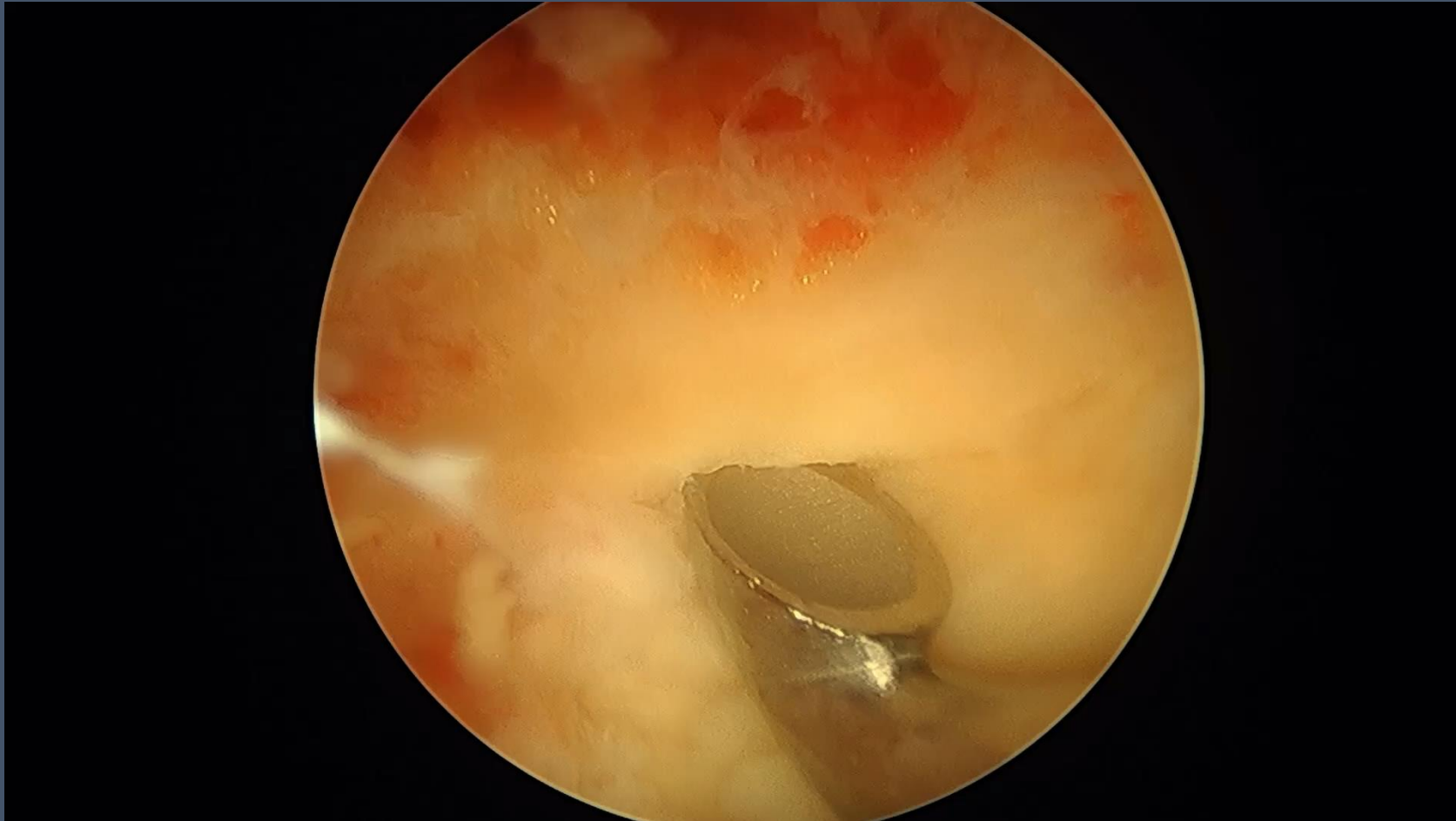
Laminotomy

**4 mm sidecutting
barrel burr (6 fluted)**

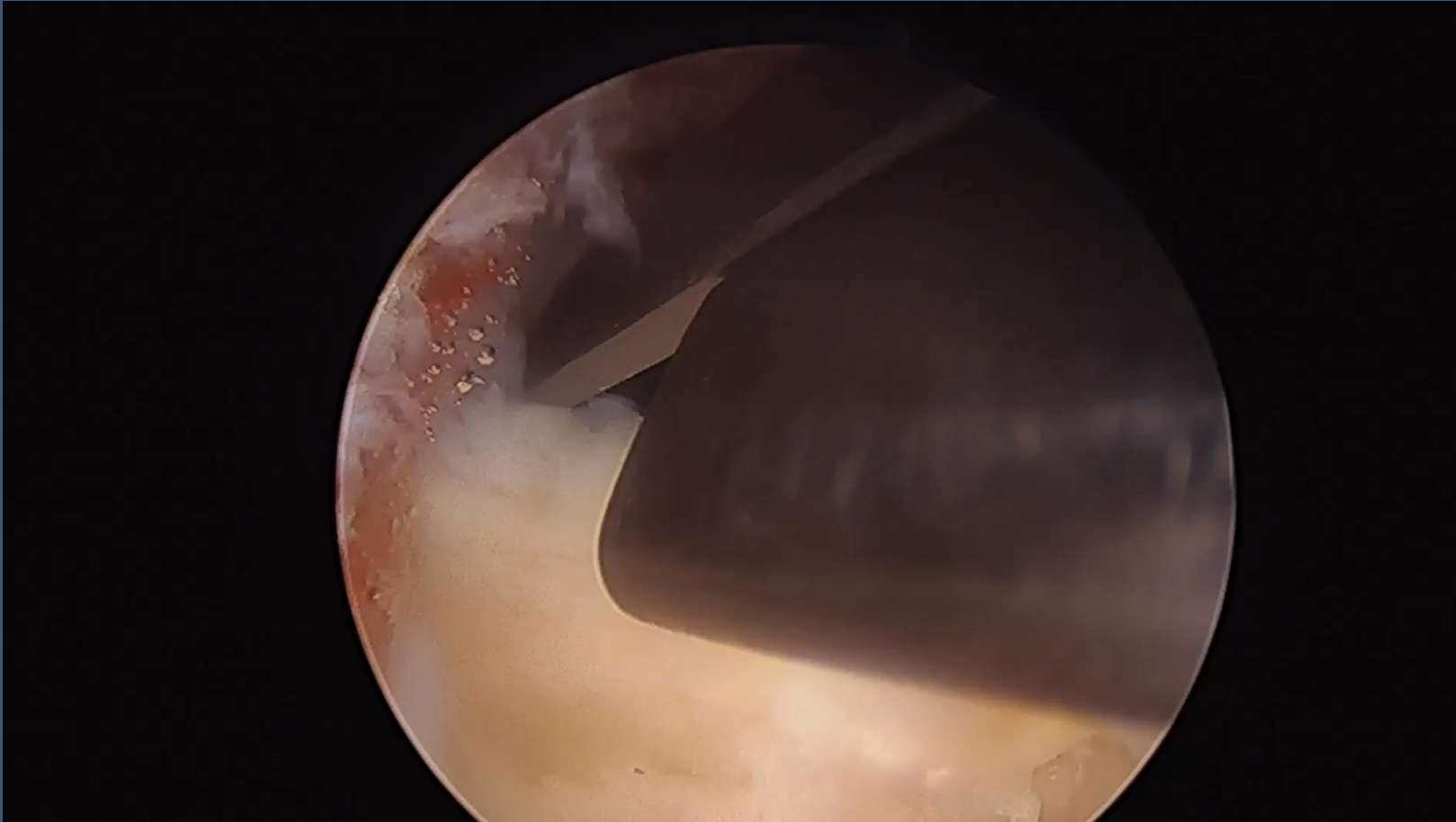
4mm diamond burr



Over-The-Top Decompression



Flavectomy



**Meningovertebral
ligaments**

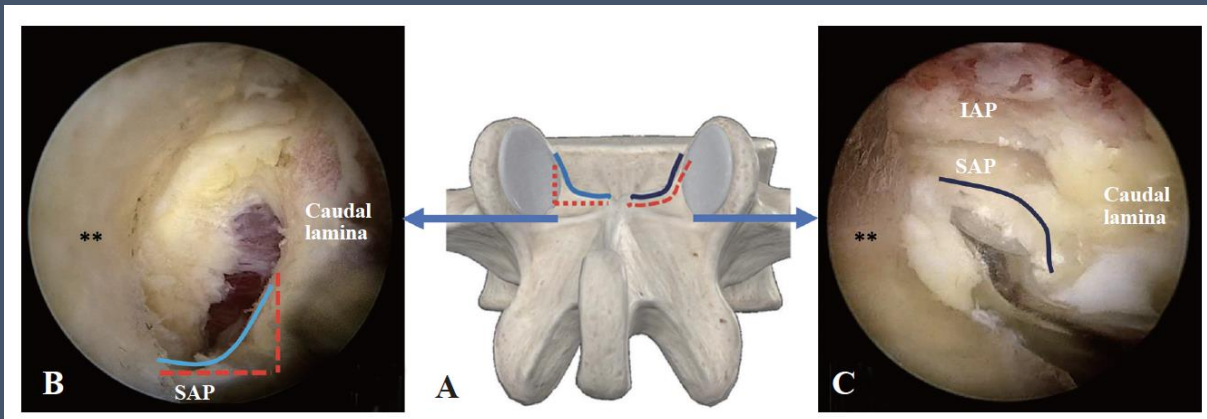
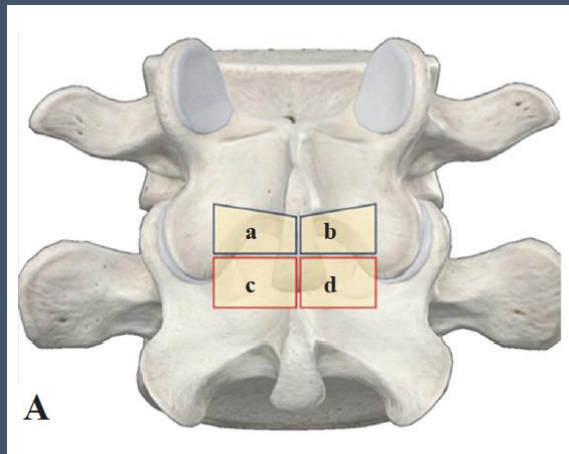
**Adhesions (old cyst / hx of
epidurals)**

Biportal endoscopic *en bloc* removal of the ligamentum flavum for spinal stenosis: nuances for the “butterfly” technique

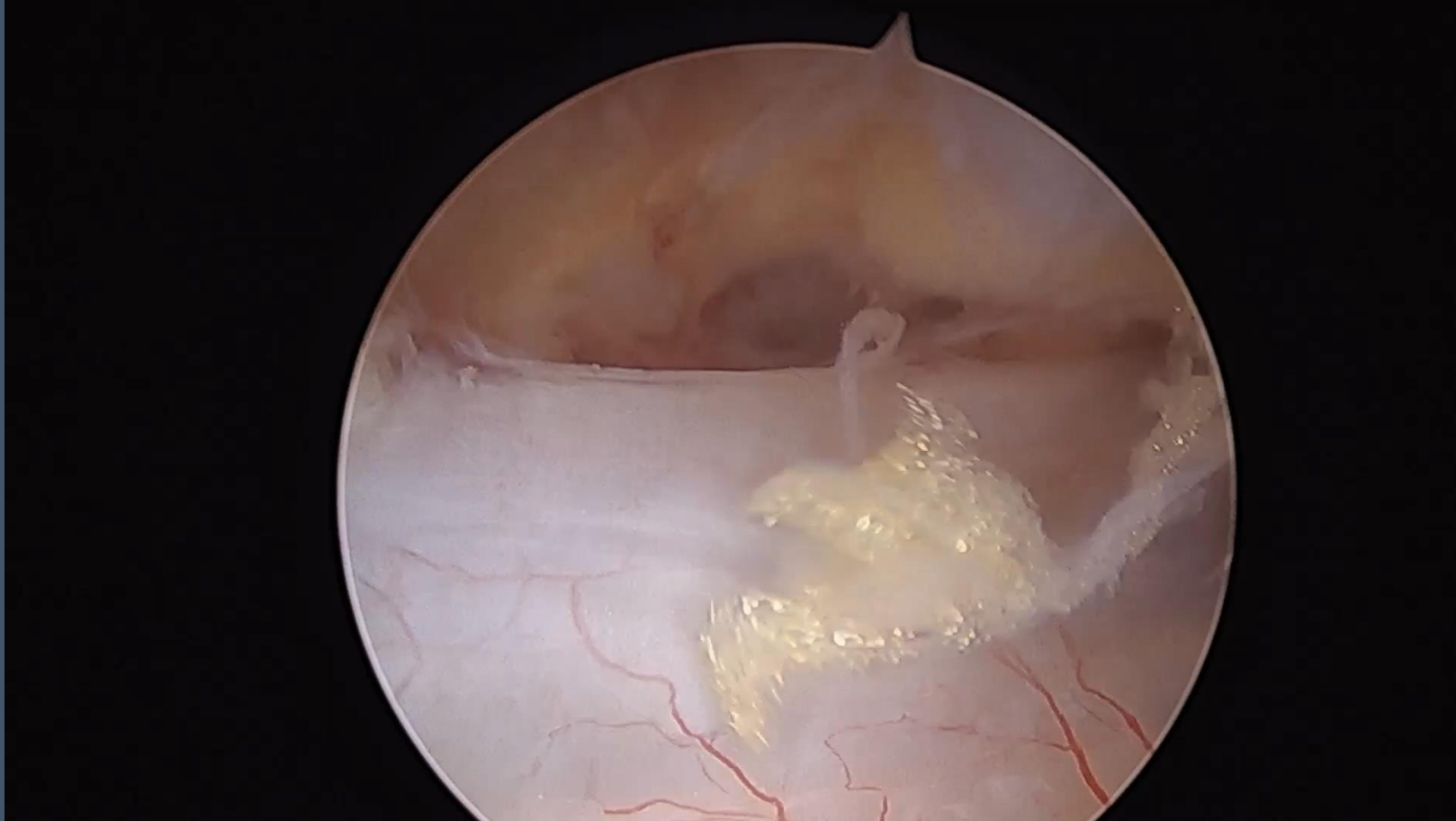
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Check Decompression / Hemostasis



Drain and Closure / Post-op

- 3-0 monocryl
- 2-0 nylon
- 10 fr hemovac drain

- Monitor 3 hours post-op in PACU

Remember the fundamentals....





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