Sacroiliac Joint Denervation

Quick Reference Guide

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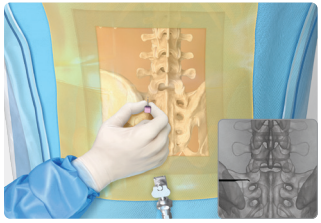
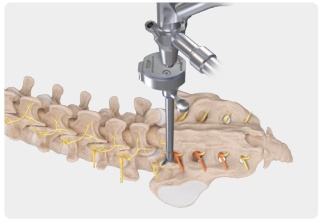


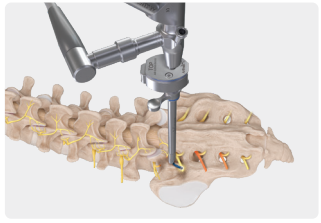
Targeting the L5 Medial Branch and S1 Lateral Branch Nerves

- Use an orthogonal AP view of the sacrum.
- Identify the junction of S1 superior articulating process (SAP) and sacral ala and insert the needle and guidewire.
- Make an incision for the cannula.



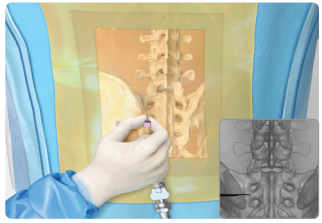
L5 Medial Branch Nerve

- Insert the switching stick, cannula, and endoscope.
- Transect the L5 medial branch nerve.
- Debride the bone at the junction of the S1 SAP and sacral ala.



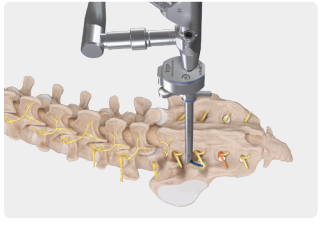
S1 Lateral Branch Nerve

- Translate the endoscope caudally and laterally.
- Transect the S1 lateral branch nerve just lateral to the S1 foramen.
- Fully debride the underlying bone.



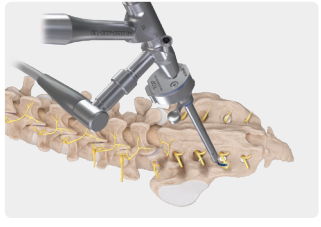
Targeting the S2 and S3 Lateral Branch Nerves

- Use an orthogonal AP view of sacrum.
- Place the needle lateral to the S1 and S2 foramina.
- Make an incision for the cannula.



S2 Lateral Branch Nerve

- Insert the switching stick, cannula, and endoscope.
- Transect the S2 lateral branch nerve just lateral to the S2 foramen.
- Fully debride the underlying bone.



S3 Lateral Branch Nerve

- Translate the endoscope caudally and laterally.
- Transect the S3 lateral branch nerve just lateral to the S3 foramen.
- Fully debride the underlying bone.

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Medial Branch Nerve Transection (MBT)

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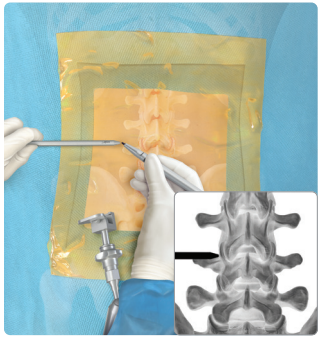
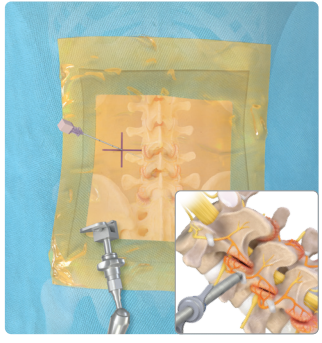
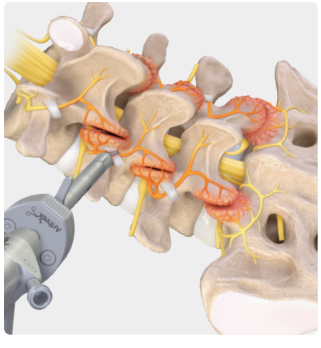


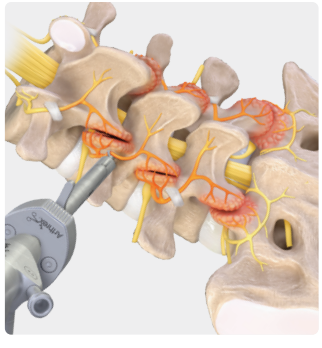
- Use a switching stick to locate the entry point just lateral to the junction of the facet and transverse process. Mark this location.



- Insert a spinal needle at the marked location and dock at the junction of the facet and transverse process.
- Make an incision through the skin and fascia with a #11 blade. Remove the inner stylet from the spinal needle and insert the guidewire. Remove the spinal needle, keeping the guidewire in place.
- Insert the switching stick over the guidewire to confirm the bony landmark.
- Insert the cannula with the bevel opening facing medial.



- Confirm your position by palpating the cranial and caudal aspect of the transverse process while palpating the lateral wall of the facet medially.
- Clear soft tissue and the mamillo-accessory ligament (MAL) with the FlexTip RF probe and endoscopic instrumentation until the medial branch nerve is clearly identified.



- Transect the medial branch nerve with an endoscopic scissor punch.
- Use the FlexTip RF probe to ablate the ends of the nerve and fully denude the lateral facet wall from the accessory process to the mamillary process.

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Interlaminar Approach for Discectomy

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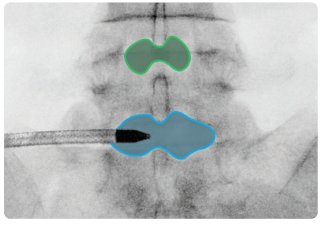
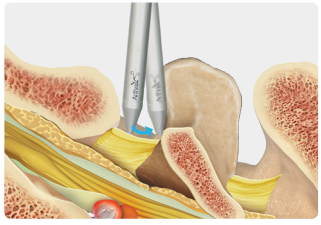


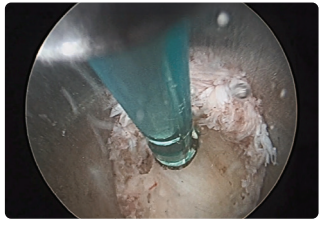
Target the Bullseye

- Place a switching stick in the middle of the ipsilateral interlaminar window.
- Use a #11 or #15 blade to create an incision <1 cm in length through the skin and lumbar fascia.
- Use fluoroscopy to confirm positioning.



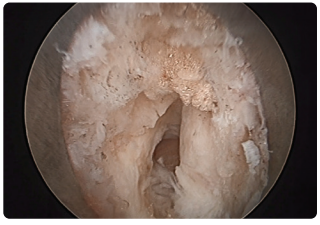
The Click

- Dock the switching stick vertically on the trailing edge of the L5 lamina (for L5-S1 discectomy).
- Use the switching stick to “click” between the caudal edge of the lamina and the ligamentum flavum (LF).
- Use tactile feedback to feel the “bounce” of the LF and confirm your location in the interlaminar window.



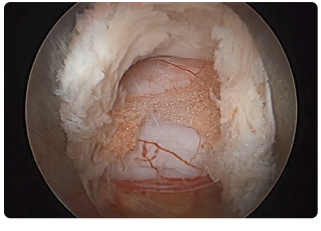
Clean the Trampoline

- Cauterize 360° around the cannula.
- Use a pituitary rongeur and FlexTip probe to remove tissue on top of the LF.



Create and Identify the Black Hole

- Rotate the cannula, using its tip to tension the remaining LF fibers.
- Use endoscopic scissors to incise through the LF.
- After encountering the black hole, pause to allow fluid to fill the space, ensuring protection of the dura.



Identify the Edge

- Rotate the endoscope to view the lateral edge, looking for the white stripe against the epidural fat, which is the edge of the nerve root.
- Use the tissue dissector to palpate and define the edge of the nerve by dissecting the adhesions.

Retract and Protect

- Inside the spinal canal, wand the cannula from lateral to medial to free up adhesions to the disc herniation.
- Rotate the opening of the cannula so it faces lateral, protecting the nerve root medially and delivering the herniation into the cannula.

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Transforaminal Approach for Discectomy

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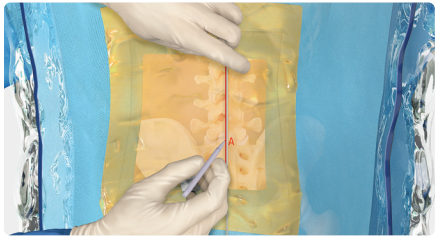
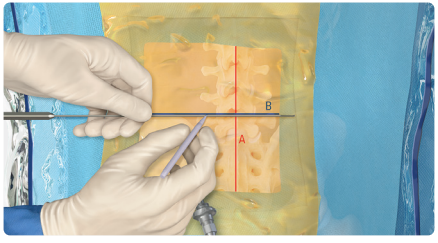


A

Midline

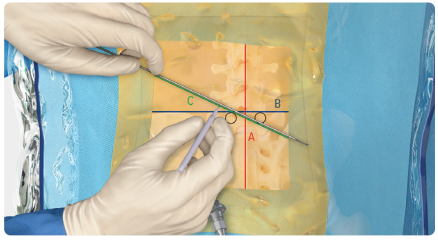
- With a blunt dissector, mark the midline using the spinous processes as reference (Line A).



B

Disc Space

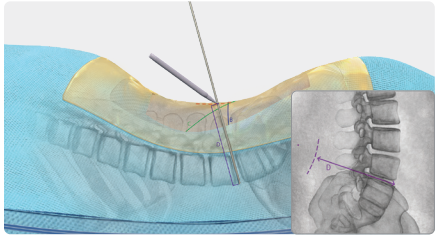
- Mark the disc space at the level of herniation (Line B).



C

Oblique Line

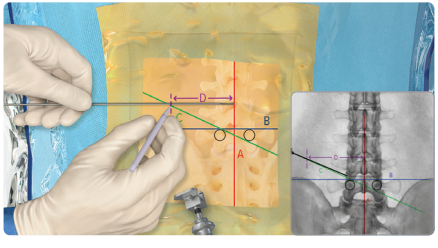
- Mark the oblique line from the superior ipsilateral pedicle to the inferior contralateral pedicle (Line C).



D

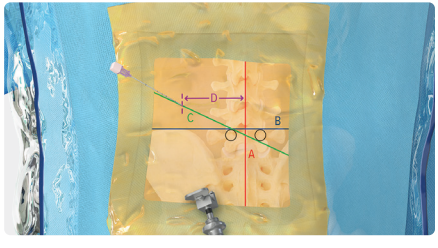
Measuring Lateral Line

- On lateral x-ray, measure the distance from the ventral disc space to the surface of skin (Line D).



Marking Lateral Line

- From the midline (Line A), mark a horizontal line that is the length of Line D to intersect the oblique line (Line C). This is your starting point for needle placement.



Needle Placement

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Complexity of Endoscopic Spine Procedures

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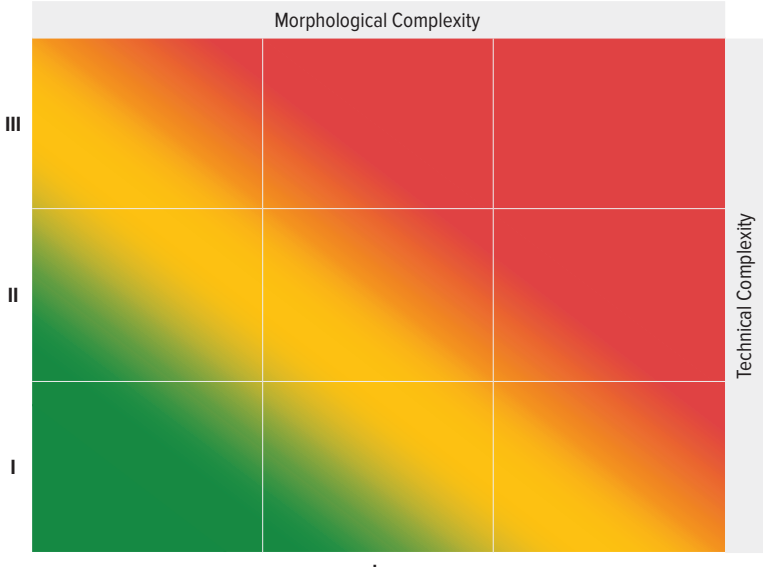

- **PECCD** (Posterior Endoscopic Cervical Central Decompression)
- **TETD** (Transforaminal Endoscopic Thoracic Discectomy)
- **TE-ULBD** (Thoracic Endoscopic Unilateral Laminotomy for Bilateral Decompression)
- **Endoscopic Fusion**

- **PECF** (Posterior Endoscopic Cervical Foraminotomy)
- **EELD** (Extraforaminal Endoscopic Lumbar Discectomy)
- **TE-LRD** (Transforaminal Endoscopic Lateral Recess Decompression)
- **ICELF** (Interlaminar Contralateral Endoscopic Lumbar Foraminotomy)
- **LE-ULBD** (Lumbar Endoscopic Unilateral Laminotomy for Bilateral Decompression)
- **TELF** (Transforaminal Endoscopic Lumbar Foraminotomy)

- **IELD** (Interlaminar Endoscopic Lumbar Discectomy)
- **TELD** (Transforaminal Endoscopic Lumbar Discectomy)
- **IE-LRD** (Interlaminar Endoscopic Lateral Recess Descompression)
- **MBT** (Medial Branch Transection)

>1b = c (eg, deformity [b] + degeneration [b] = c)

- Easy access (eg, interlaminar L5-S1)
- Soft disc herniation

- Level-specific difficulty (eg, transforaminal L5-S1)
- Relevant deformity/ spondylolisthesis
- Severe degeneration
- Calcified disc herniation
- Osteodiscal stenosis

- Potential danger to critical structures (eg, vertebral artery looping)
- Scarring (eg, revision at the same side)

Reference
Farshad M, et al. *N Am Spine Soc J.* 2025;22:100603. doi:10.1016/j.xnsj.2025.100603.

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