

Basivertebral nerve ablation (Intrasept procedure)

Overview

Basivertebral nerve ablation is a minimally invasive procedure to relieve chronic low back pain. The basivertebral nerve lies deep within each vertebra bone of the spine. Damage to the bony endplates of your spine can cause vertebrogenic pain. If you suffer chronic back pain from endplate damage, basivertebral ablation may be a treatment option.

What is basivertebral nerve ablation?

The vertebral endplates are the top and bottom edges of the vertebra bone where the discs attach. The bony endplates bear a lot of stress and are prone to injury, cracks, and inflammation (Fig. 1).

The damaged endplates are innervated by the basivertebral nerve, which sends pain signals to the brain. Vertebrogenic pain is a deep aching or burning in the middle of the low back. It gets worse with sitting and flexion. Unlike disc problems, the pain does not radiate or cause numbness / tingling.

Basivertebral nerve ablation, also called Intrasept Procedure, relieves pain from damaged bony endplates. A radiofrequency probe ablates or "burns" the nerve to stop the pain signals.

Who is a candidate?

Basivertebral nerve ablation is an option for patients with vertebrogenic low back pain who have not improved after 6 months of conservative care. Most insurance plans require an MRI scan with findings of Modic endplate changes (Fig. 2).

- Modic type 1: edema and inflammation of bone marrow; endplate cracks
- Modic type 2: fat replaces normal bone marrow

Ablation uses X-ray guidance and should not be performed on people who are pregnant, have an infection, or have bleeding problems.

What happens before treatment?

The doctor who will perform the procedure reviews your medical history and MRI images. Be prepared to ask questions at this appointment.

Provide a list all the medications you are taking, including supplements, and tell the physician if you have any allergies. You may need to stop taking aspirin or blood thinners several days before the procedure. Discuss any medications with your

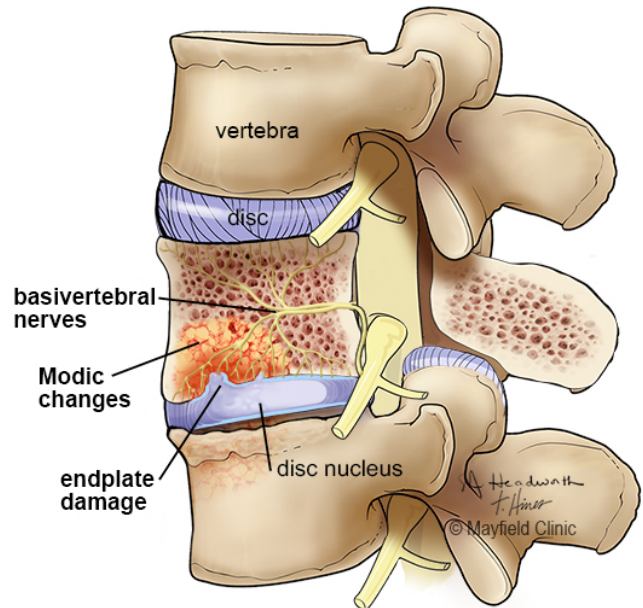


Figure 1. Side view of spine. Damage to the vertebral endplates aggravates the basivertebral nerve deep within the bone marrow of a vertebra.

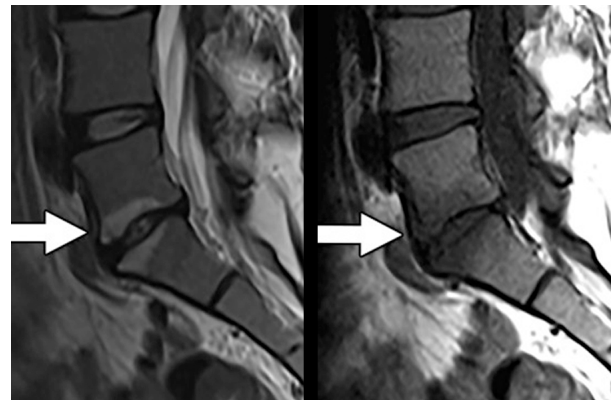


Figure 2. MRI shows Modic changes of the vertebral endplates above and below the disc.

doctors, including the one who prescribed the medication and the doctor who will perform the ablation.

The procedure is performed in an outpatient center. Plan to have someone drive you to and from the center the day of the ablation.

Don't eat or drink after midnight (unless the center tells you otherwise). You may take permitted medicines with a small sip of water.

What happens during treatment?

At the time of the procedure, you will be asked to sign consent forms. The procedure lasts 1.5 hours, depending on how many levels are treated.

Step 1: prepare the patient

You will lie face down on an X-ray table. Anesthesia will be given. Under conscious sedation, you are awake but feel no pain and may have no memory of the procedure. Your back area will be cleansed.

Step 2: insert the cannula

A small, half-inch skin incision will be made over the bone. Using X-ray fluoroscopy, the doctor taps a hollow tube, called a cannula, through the bony pedicle into the vertebra. Fluoroscopy allows the doctor to watch the cannula in real time on the monitor to guide it to the desired location.

Step 3: deliver heating current

A radiofrequency probe is inserted through the cannula to the basivertebral nerve. Next, the probe delivers a heating current to create a small and precise burn (Fig. 3). The current destroys the nerve fibers that transmit pain. The burn takes 7 to 15 minutes to create a lasting lesion.

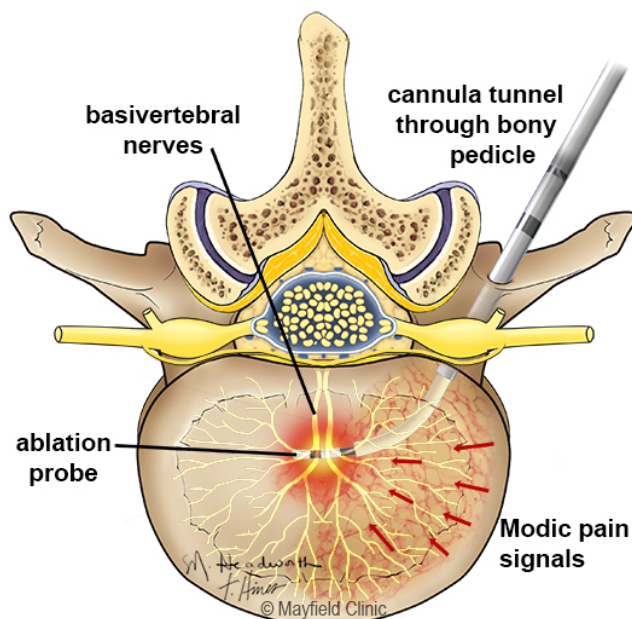


Figure 3. Top view of vertebra. A heating current is passed through an electrode to destroy the basivertebral nerve.

Step 4: The probe and cannula are removed. The incision is closed with tissue glue and a bandage.

You will return to the recovery area. After being monitored for a short time, you can leave the center. Someone must drive you home.

What happens after treatment?

Soreness can be relieved with an ice pack for 20 minutes a few times a day. Follow the doctor's discharge instructions for **2 weeks** or until your follow-up appointment. In general, you can expect:

- You may remove the cover bandage and shower the next day. No baths.
- If you have Steri-strips over the incision, leave them on for 3 to 5 days.
- Gently wash the incision covered in Dermabond skin glue with soap and water every day. Don't rub or pick at the glue. Pat dry.
- If there is drainage, cover with a dry dressing.
- Don't lift anything heavier than 15 pounds.
- No strenuous activity. Walk often as tolerated.
- Don't drive the first 2-3 days or while taking pain medicines or muscle relaxers.

Call the office if you have a fever over 101.5 °F or if the incision shows signs of infection (spreading redness, swelling, pain, or drainage).

Schedule a follow-up appointment with the referring or treating physician 2 weeks after the procedure.

What are the results?

Pain relief is typically felt within 3 weeks, although it may be immediate for some patients.

Pain relief is long term. Unlike facet nerve ablation, the basivertebral nerves will not regrow through the burned lesion. Basivertebral ablation is 75% effective at 5 years after the procedure [1]:

- 66% of people had 50% reduction in back pain
- 47% of people had 75% reduction in back pain
- 34% of people had 100% pain relief

What are the risks?

Nerve ablation is a relatively safe procedure with minimal risks. Complications reported in the literature include bleeding, infection, increase in nerve pain, vertebra fracture, and allergic reaction.

Sources & links

If you have questions, please contact Mayfield Brain & Spine at 800-325-7787 or 513-221-1100.

Sources

1. Fischgrund JS, et al. Long-term outcomes following intraosseous basivertebral nerve ablation for the treatment of chronic low back pain: 5-year treatment arm results from a prospective randomized double-blind sham-controlled multi-center study. *Eur Spine J.* 29(8):1925-1934, 2020



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