

Myelogram basic level

Overview

A myelogram is an invasive diagnostic test that uses x-rays to examine the spinal canal. A special dye is injected into the spinal canal through a hollow needle. An x-ray fluoroscope then records the images formed by the dye. Myelograms can show conditions affecting the spinal cord and nerves within the spinal canal.

How does a myelogram work?

Regular x-rays of the spine only give a clear picture of bones. The dye (contrast agent) used in a myelogram shows up white on the x-ray allowing the doctor to view the spinal cord, exiting nerves, and canal in detail (Fig. 1). The doctor inserts a hollow needle through your skin into the spinal canal (see lumbar puncture). The dye is injected into the space surrounding the spinal cord and nerve roots. This dye is radiopaque, meaning it's impenetrable by x-ray. Then x-rays and/or a CT scan are done. The scan can see fine details and can tell your doctor how your bones are affecting your nerves.

What does a myelogram show?

A myelogram can detect conditions affecting the spinal cord and nerves within the spinal canal, including disc herniations, bone spurs, spinal stenosis, tumors, and infection.

Who performs the test?

A radiologist will perform the test in the radiology department of the hospital or at an outpatient imaging center.

How should I prepare for the test?

There are certain medications, including but not limited to, aspirin, blood thinners such as warfarin (Coumadin) and clopidogrel bisulfate (Plavix), antidepressants, and Glucophage for diabetes that may interfere with the dye used in the test. You will need to discontinue these medications several days prior to the date of the test. You should contact your doctor's office when your appointment is scheduled to discuss your medications. They will give you specific instructions for taking your medications on the day of the myelogram.



Figure 1. The contrast dye makes the spinal canal clearly visible on an x-ray. A herniated disc (arrow) can be seen compressing the spinal nerves.

- Drink as much fluid as possible up to midnight the day before your myelogram.
- DO NOT EAT ANYTHING AFTER MIDNIGHT (diabetics may have different instructions).
- Make arrangements to have someone stay with you while in the hospital and to drive you to and from the hospital. You will **not** be able to drive yourself home.

Before the test, you will be asked to change into a hospital gown. An intravenous (IV) line may be placed in your arm. The radiologist or nurse will discuss the test with you, explain the risks, answer any questions, and have you sign consent forms.

What happens during the test?

Step 1: prepare the patient

You may be given a sedative to make you drowsy and relaxed. A doctor and at least one technician will be in the room. You will lie on your stomach with a pillow beneath it. After cleaning your back with a cooling antiseptic, the doctor will numb the area of your back where the needle will be inserted. This may cause some brief stinging.

Step 2: insert the needle into the spinal canal

Next, a slender, hollow needle is inserted into your spinal canal to draw out some cerebrospinal fluid for testing. The contrast dye is inserted into the spinal canal through the hollow needle. You will probably only feel pressure, though some people feel a sharp stinging sensation. Let your doctor know if you are feeling pain.

Step 3: take X-ray pictures

After the dye is injected you will lie on your stomach with a pillow under your abdomen. The table may be tilted to move the contrast dye through your spinal canal and x-ray pictures will be taken of your back. At this point you should remain very still so that the x-ray images will not be blurred. Most patients will have a CT scan following the myelogram.

What happens after the test?

After the x-rays and CT scans have been taken, you will be taken back to a room and observed for 4-8 hours with your head raised. Do NOT lie flat. Once the doctor releases you, a friend or family member may drive you home.

Discharge instructions

1. Stay in bed for 24 hours after your myelogram. **Do not lie flat.** Instead, elevate the head of your bed 30 degrees or use 2 pillows. You may get up for short periods (e.g., for the bathroom and meals).
2. Drink lots of fluids for 18 hours, at least 8 ounces every 2 hours while awake. If possible, drink caffeinated beverages, which create a diuretic effect, causing increased urination and thus eliminating the dye used during the myelogram.
3. If your headache, nausea, or vomiting persists after 48 hours of bed rest, call your doctor.
4. In general, you can resume normal activities the next day.

What are the risks?

A CT scan is safe for most people, though pregnant women shouldn't have one.

Be sure to tell the doctor if you are pregnant or have a history of allergies (to medications, previous iodine injections, or shellfish), diabetes, asthma, a heart condition, kidney problems, or thyroid conditions. Also tell them if you take any blood thinning medication such as aspirin, Plavix, or Coumadin.

About 5% to 10% of patients experience side effects caused by the dye that include headache, nausea, and vomiting. However, these side effects should not be severe.

How do I get the test results?

The radiologist will promptly review your images and communicate directly with your referring doctor, who in turn will discuss the results with you.

Sources & links

If you have further questions about this diagnostic test, contact the doctor that ordered the test or visit www.radiologyinfo.org.

Glossary

contrast agent: a liquid (usually iodine or gadolinium) that is injected into your body to make certain tissues show up clearly during diagnostic imaging (angiography, CT, myelogram, MRI).

computed tomography (CT) scan: a type of diagnostic X-ray that views anatomical structures of the brain and spine, especially bones, soft tissues and vessels. Images are viewed in "slices," similar to an MRI.

X-ray: electromagnetic radiation used in diagnostic imaging to view shadows of tissue density in the body, also called roentgenogram.

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