



PATIENT & CAREGIVER EDUCATION

Leptomeningeal Metastases

This information describes leptomeningeal metastases (LEP-toh-meh-NIN-jee-ul meh-TAS-tuh-SEEZ) and explains how they're treated.

About Leptomeningeal Metastases

Cells from some types of cancer, such as breast cancer, lung cancer, and melanoma, can sometimes spread to your meninges, cerebrospinal fluid (CSF), or both.

- Your meninges are the layers of tissue that cover and protect your brain and spinal cord. They're sometimes described as a jacket or envelope.
- CSF is a liquid found between the layers of your meninges. It's made inside your brain and helps cushion your brain and spinal cord.

When cancer cells are found in your meninges or CSF, this is called leptomeningeal metastases (LM).

Symptoms of Leptomeningeal Metastases

LM can cause many different symptoms, such as:

- Difficulty thinking

- Double vision
- Headaches
- Difficulty speaking or swallowing
- Pain
- Weakness or lack of coordination in your arms and legs
- Loss of bladder or bowel control
- Seizures

You may have 1 or more of these symptoms. Having 1 symptom doesn't mean you will get others.

Diagnosing Leptomeningeal Metastases

Magnetic resonance imaging (MRI) scan

If your doctor thinks you have LM, you might have a magnetic resonance imaging (MRI) scan of your brain or spine. An MRI scan can be used to diagnose LM.

Lumbar puncture

Your doctor might want to do a lumbar puncture (sometimes called a spinal tap) to look for cancer cells in your CSF or see how many cancer cells are in your CSF.

During a lumbar puncture, your doctor will give you an injection (shot) of a medication to numb the skin on your lower back. Then, they will put a needle through your skin and into your spinal canal to take a sample of your CSF. The sample will be sent to the pathology department to see if there are any

cancer cells. If there are cancer cells in your CSF, it means you have LM.

You might need to have more than one lumbar puncture, because it can be hard to find cancer cells in CSF.

A lumbar puncture is also a way for your doctor to measure the pressure within your CSF. LM can cause high CSF pressure, which can make your symptoms worse.

Treatment for Leptomeningeal Metastases

The goal of treatment for LM is to relieve your symptoms and try to kill the cancer cells in your meninges and CSF. You might have radiation therapy, chemotherapy, or both. The type of treatment your doctor thinks is best depends on the type of cancer you have, your symptoms, and your test results. Your doctor and nurse will talk with you and your family about your treatment plan.

Radiation therapy

You might get radiation therapy to places where clusters of cancer cells are causing symptoms, such as your head, areas on your spinal cord, or both. Sometimes, radiation therapy is given to one area first and to another area later.

Radiation therapy is usually given in an outpatient center, but it can also be given while you're in the hospital. You and your doctor will make this decision together.

Chemotherapy

Chemotherapy for LM is given in 3 different ways:

- By swallowing a pill (oral chemotherapy)
- Through a needle in your vein (intravenous (IV) chemotherapy)
- Directly into your CSF (intrathecal or intra-Ommaya chemotherapy)

Your doctor will choose which type of chemotherapy is best for you. Different types of cancer respond best to different types of chemotherapies.

If you're getting chemotherapy directly into your CSF, it will probably be done with an Ommaya reservoir. An Ommaya reservoir is a dome-shaped device that's placed under your scalp during a surgery. It has a small tube that connects it to the areas of your brain where CSF is made. Chemotherapy given this way has very few side effects because only a small dose is needed to treat the cancer cells in the CSF.

Before the surgery to place your Ommaya reservoir, you will get general anesthesia (medication to make you sleep). The surgery takes about 1 hour. When the anesthesia wears off, you will have some discomfort at your incision site (the place where the cut was made to place the reservoir). Ask your nurse for the resource *Frequently Asked Questions About Ommaya Reservoirs and Ommaya Taps*

(www.mskcc.org/pe/ommaya_reservoirs_taps) for more information.

Even if you have an Ommaya reservoir, you might also get intrathecal chemotherapy through a lumbar puncture, IV chemotherapy, or oral chemotherapy. This is to help control both your primary cancer and the LM.

Appointments during your treatment

While you're having treatment for LM, your healthcare team will monitor you closely. You may have MRI scans, lumbar punctures, or both every 6 to 8 weeks. You may also have a physical exam in clinic every 6 to 8 weeks.

Caring for Yourself During Your Treatment

There are many ways we can help you manage the symptoms of LM. It's important to tell your doctor or nurse about any problems, changes, or improvements in your symptoms. This helps us know how your treatment is going and helps us decide if we need to make any changes to your treatment plan.

Being diagnosed with LM can cause anxiety. Your doctor, nurse, and social worker are available if you want to discuss your concerns about LM, your primary cancer, or both.

If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Leptomeningeal Metastases - Last updated on February 22, 2019
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