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Meningioma - Stages and Grades [1]

This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 04/2014

ON THIS PAGE: You will learn about how doctors describe a tumor?s growth or spread. This is called the stage. To see other pages, use the menu on the side of your screen.

Staging is a way of describing where the tumor is located, if it is cancerous, if or where it has spread, and whether it is affecting other parts of the body. Doctors use diagnostic tests to find out the tumor?s stage, so staging may not be complete until all of the tests are finished. Knowing the stage helps the doctor to decide what kind of treatment is best and can help predict a patient's prognosis, which is the chance of recovery. There are different stage descriptions for different types of tumors.

After meningioma has been diagnosed, additional tests will be done to learn more about the tumor. As outlined in the Risk Factors [3] section, people with neurofibromatosis type 2 [4] are more likely to have more than one meningioma. In this situation, a patient will have a variety of tests, including an MRI, to find out how much the tumor has spread within the brain and spine.

There is no formal staging system for meningioma because CNS tumors cannot be staged the same way as other types of tumors. For meningioma, doctors use seven factors to determine the treatment options and prognosis:

Tumor histology and grade. How a tumor looks under a microscope is called tumor histology, which is performed by a pathologist. A sample of the tumor is removed during surgery for a biopsy. When surgery is not possible, a biopsy alone is done to get the sample.

Using the histology, the pathologist can determine the type of tumor and its grade. Grade describes how much tumor cells look like healthy cells when viewed under a microscope. The pathologist compares the tumor tissue with healthy tissue. Healthy tissue usually contains many different types of cells grouped together. If the tumor cells looks similar to healthy tissue and contains different cell groupings, it is called differentiated or a low-grade tumor. If the tumor tissue looks very different from healthy tissue, it is called poorly differentiated or a high-grade tumor. The tumor?s grade can help the doctor predict how quickly the cancer will spread. In general, the lower the tumor?s grade, the better the prognosis. To decide on a treatment, both the type and grade of the tumor must be identified.

In general, a meningioma is classified into one of three grades:

- A grade I tumor grows slowly and is noncancerous.
- A grade II tumor is atypical and is between noncancerous and cancerous.
- A grade III tumor is cancerous and can grow and spread very quickly.

Labeling Index using MIB-1 test. This test identifies the percentage of cells in the tumor that are in the process of dividing, called the S phase of division. The more cells that are in that phase, the more aggressive the tumor is. Generally, a slow-growing meningioma has a MIB-1 of less than 5%.

Age of patient. In adults, the age of the patient when diagnosed is one of the best ways to predict prognosis. In general, the younger the adult, the better the prognosis.

Extent of tumor residual. This is how much of the tumor was left behind after surgery. It includes three classifications:

- Gross total. The entire tumor was removed, although microscopic cells may remain.
- Subtotal. Only part of the tumor was removed.
- Biopsy only. Only a small portion, used for a biopsy, was removed.

The prognosis is better when all of the tumor can be surgically removed.

Tumor location. Tumors can form in any part of the CNS. A tumor can cause more damage to some areas than others, and some tumors are harder to completely remove than others because of where they are located.

Functional neurologic status. The doctor will test how well a patient?s CNS is working by using an assessment called the Karnofsky Performance Scale. A higher score indicates a better prognosis.

Metastatic spread. Meningioma very rarely spreads to other parts of the body.

Recurrent meningioma

A recurrent tumor is one that has come back after treatment. If there is a recurrence, the tumor may need to be graded again using the system above.

Biogenetic markers

The factors listed above are the best ways to determine the prognosis for a person with meningioma. Researchers are currently looking for tumor markers that could make meningioma easier to diagnose and allow the staging of adult CNS tumors. These tools may someday make it possible for doctors to determine how quickly a brain tumor will grow and spread, develop more effective treatments, and more accurately predict prognosis.

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[5].

Information about the tumor will help the doctor recommend a treatment plan. The next section helps explain the treatment options for this meningioma. Use the menu on the side of your screen to select Treatment Options, or you can select another section to continue reading this guide.

Links:
[1] http://www.cancer.net/cancer-types/meningioma/stages-and-grades
[2] http://www.cancer.net/about-us
[3] http://www.cancer.net/node/19269
[4] http://www.cancer.net/node/19451
[5] http://www.cancerstaging.net/