BAPTIST MD Anderson Cancer Center
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Meningioma

Meningiomas are the most common tumor that originates in the head. Although commonly referred to as brain tumors, they do not grow from the substance of the brain itself. Rather, they come from the dura, a layer of tissue that wraps around the brain. As meningiomas grow, they can put pressure on the brain tissue next to it. This is how they cause symptoms which include:

- Headache
- Weakness on one side of the body
- Confusion
- Personality changes
- Nausea and vomiting
- Decreased balance or dizziness
- Seizures
- Vision changes

Meningiomas are divided into 3 **grades**.

- **Grade 1** meningiomas are the most common. They tend to grow slowly and are often managed, if necessary, with surgery if they can be safely removed. However over time these tumors can grow back and generally they are monitored with periodic MRI.
- **Grade 2** meningioma accounts for approximately 15% of all meningiomas. They tend to be more aggressive than grade I tumors and are often treated more aggressively. If possible, surgery remains the treatment of choice but often radiation is administered. Similar to grade I meningiomas, periodic MRIs of the brain are performed to monitor for tumor growth
- **Grade 3** meningiomas are the least common type of meningioma, accounting for approximately 1% of tumors. They are very aggressive and are at high risk to grow back even with treatment

Grade is determined by a *neuropathologist* using a microscope, not by the appearance of the tumor on MRI or CT.

Meningiomas are often discovered by accident. Suspected meningiomas that are small, not causing symptoms or pressure on surrounding brain, are often watched periodically with imaging. Under these circumstances treatment may not be required. In this case the diagnosis is assumed. The diagnosis of meningioma and the grade can only be truly confirmed after at least a part of it is removed and examined under a microscope.

Treatment

Surgery

- Removal of the tumor by a neurosurgeon is the first treatment considered.
- Confirms the diagnosis and grade of tumor
- Alleviates symptoms tumor may be causing
- Improves chances tumor will not grow back

However, surgery is not performed, nor is it required in all patients. Under certain circumstances, it is more appropriate to avoid surgery and treat with radiation or simply watch the tumor with occasional imaging (MRI or CT)

- Risk of surgery is high because of location of tumor
- Assumed meningioma is small or not causing symptoms
- Overall health of individual with suspected tumor
- Tumor is small and can be managed with other treatments (example, radiation)

Radiation Therapy

Radiation is beams of energy focused on a target. Radiation may be administered as a single dose in one day or as a series of daily doses over a period of time. Many factors determine which approach is taken. Circumstances when radiation is used to treat meningiomas include:

- Tumor that is causing symptoms cannot be removed with surgery
- Tumor remaining after surgery that is enlarging, and repeat surgery is not advised
- Higher grade tumor (2 or 3) not completely removed with surgery
- Tumor that can be confidently controlled with radiation thereby avoiding a potentially riskier surgery
- Older age or frailer individual

Medicine

Medicines are the least well studied treatment. Medicines are usually reserved for patients in which patients are not candidates for surgery or radiation. There is no well-established medicine to treat meningiomas.

Treatment Team

The treatment approach taken to manage a meningioma is determined by members of your treatment team. Collectively, the team reviews all of the circumstances of an individual's case before making a recommendation. The options will be discussed with you and whoever you choose to participate in your care. Physician members of your treatment team include:

- Neurosurgeon. Specializes in brain surgery
- Neuro-oncologist. Specializes in management of brain tumors
- Radiation Oncologist. Specializes in the use of radiation to treat tumors
- Neuropathologist. Specializes in looking at tissue under a microscope and who determines the diagnosis and grade of tumor
- Neuro-radiologist. Specializes in the interpretation of imaging of your brain and brain tumors.

The physicians on the team are supported by nurses, nurse practitioners or physician assistants, medical assistants and technologists among others.