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Cerebello-Pontine Angle Meningioma

An information guide

Cerebello-Pontine Angle Meningioma

What is a meningioma?

You have been diagnosed with a meningioma. A meningioma is a non-cancerous tumour that arises from the lining of the brain. This leaflet is specifically for patients diagnosed with a meningioma located in the cerebello-pontine angle. This is a location in the base of the skull. It is a triangular space between filled with CSF (cerebro-spinal fluid), between the cerebellum (an area of the brain that controls balance), the brainstem (an important structure that connects the brain to the spinal cord) and the tentorium (a dural layer that separates compartments of the brain and brainstem).

Meningiomas are usually slow growing (1-2mm per year), and many do not grow at all. They are primary brain tumours meaning they have not spread from elsewhere in the body and generally never spread anywhere else in the body. They are not actually tumours of the brain tissue but from the meninges, a protective covering that covers the brain and spinal cord. They are the most common non-cancerous brain tumours and is it thought around 1:38,000 people have them. They are more common in females and in those over 40 though there are some younger patients who will be diagnosed with meningioma.

Meningiomas are soft tissue tumours but can involve the bones around the skull base. You may hear this referred to as intraosseous.

What has caused my meningioma?

Like most brain tumours, the cause is almost always unknown. A small portion of patients may have developed a meningioma secondary to radiotherapy to the head/neck. This is uncommon and generally happens many years following the treatment.

Another unlikely but possible cause is a genetic predisposition. This means you have a change in your DNA sequence affecting genes that would usually suppress tumour growth. This can be hereditary (passed down from parents) or can occur as a new finding without a family history. This will be discussed with you if felt to be relevant, but most patients will not have a genetic link to their meningioma.

There is some evidence that female hormones may influence tumour growth though it is still less clear what may cause them to arise in the first instance. This is mainly in relation to a hormone called progesterone which, even though it is described as a female sex hormone, is found naturally in both men and women. However, it is typically higher in females and will increase during menstrual cycles and pregnancy. There are also certain hormone preparations that will contain progesterone (or a synthetic form) that could increase the risk of tumour growth when used for prolonged periods. Further studies are needed for clearer guidance on any definite link with tumour growth. More information can be found in our separate leaflet "Meningioma and hormone preparations". You can also speak to the team if you have specific concerns about medication you are taking.

What symptoms should I expect?

Many patients do not get symptoms associated with their meningioma and some tumours are found incidentally when a scan is done for another reason.

The cerebello-pontine angle houses various important structures that travel between the brain and the rest of the head/neck including the nerve of facial movement and the nerves of hearing and balance. Other nerves nearby include the facial feeling nerve, nerves that move the muscles around the eyes, the nerves that control voice, swallow, and movement of muscles around the tongue throat and shoulders. The nerves supply function to that same side alone. There are also important blood vessels passing through this area.

If any of the nerves become compressed by the tumour, or are affected by treatment to the tumour, you may experience symptoms such as:

- Hearing loss
- Tinnitus
- Imbalance, dizziness or vertigo
- Facial spasm
- Facial weakness
- Taste alteration
- Dry mouth
- Dry eye
- Facial numbness or sensory change
- Facial pain
- Double vision

- Changes to voice strength/quality
- Changes to tongue and palate movement
- Changes to swallow

Some patients describe headache, physical and mental fatigue and changes to cognitive function (such as memory issues, difficulty processing information etc) though it is unclear exactly why some people are affected in this way where others may not be.

Rarely, if tumours are large, patients may develop difficulties relating to compression of the brainstem which could include increasing severe imbalance and uncoordinated movement, weakness down arms/legs and changes in alert levels. There could also be secondary problems relating to the flow of the CSF causing it to build up and put pressure on the brain. This is a rare but serious complication which will need urgent medical treatment.

What investigations will I have?

It is likely you will have an MRI scan (a magnetic resonance imaging scan) or a CT (computerised tomography scan) to receive a diagnosis of a meningioma. We may also refer for an audiogram (a hearing test), balance function tests and occasionally a test to assess swallow using a small camera inserted into the nose and back of throat.

How will my meningioma be treated?

Treatment varies depending on several factors. This includes tumour size, rate of growth, symptoms, your overall health and, of course, your wishes. The team will discuss your case at an MDT (a multidisciplinary meeting) where several specialists including surgeons, radiologists, radiotherapy oncologists and specialist nurses are present. The discussion forms a recommendation which will then be discussed with you and your family/friends to form a plan. As most tumours are slow growing, there is usually no need to rush into treatment.

The 3 treatment options are:

- **Watch and wait**. This is where we are not intervening with treatment but are actively observing the tumour with scans every now and again (timing will vary and will be discussed with you) and sometimes with other tests as described earlier. If the tumour is small, not growing/growing slowly or is not causing concerning symptoms, this is usually a very safe way of managing your meningioma. If any symptoms develop, the team can discuss management through various means such as medications and therapies, if treating the tumour is not felt to be appropriate

- **Surgery.** Surgery aims to remove the tumour as safely as we can. This may mean complete removal of the tumour, but we sometimes choose to leave very small bits of the tumour behind if it is too risky to remove it all. This can be due to its involvement with the surrounding structures such as the nerves or brain tissue. Surgery is usually a significant undertaking, and the team will spend time discussing your individual case with you.

There are risks associated with surgery. The risk % is generally low but will vary and an individual risk profile will be discussed with you based upon various factors but may include:

- Hearing deterioration or hearing loss
- Tinnitus or tinnitus increase
- Imbalance/dizziness/Vertigo
- Ataxia (uncoordinated movement)
- Facial spasm
- Facial palsy (including inability to move the facial muscles, close or blink the eye, dry eye and mouth, taste alteration)
- Facial sensory change including numbness, tingling or pain
- Swallowing difficulties
- Changes to voice strength and quality
- Double vision
- CSF (cerebro-spinal fluid) leakInfection of the wound
- Infection of the brain/lining of the brain (i.e., meningitis, abscess)

Other risks, which are rare but may have a more profound impact include:

- Stroke
- Bleeding in and around the brain
- Haematoma (collection of blood) around the brain
- Hydrocephalus (fluid build-up on the brain)
- Death

Most patients will not have any of these complications or may have temporary issues but would recover in time.

Surgery is done through an incision in the skin, usually at the back of the ear on the side of the tumour.

Surgery usually lasts for several hours and will be done under general anaesthetic (you will be asleep). Whilst asleep you will be attached to various drips, monitoring lines and specialist equipment designed to monitor you closely. You may have a urinary catheter.

Following surgery, you will wake with most of the equipment still in place and you will spend a night in a monitored bed where you will be closely observed.

It is normal to feel sick, dizzy and fatigued. Most patients will have headache and/or wound pain. The nurses looking after you will give you medication to reduce these symptoms. You may have blurred vision, but this is usually temporary. You may experience symptoms relating to involvement of the nerves described earlier. Your team will discuss your symptoms and help manage them.

Length of stay is variable. It can be 2 nights for some people who have very few symptoms or can be longer if you need more support and therapy. Some patients will need to see the physiotherapist, occupational therapist or speech and language therapist whilst an inpatient.

We will discharge you home once you are independently mobile and your symptoms are manageable, but it is important to know you will still be a patient once home and it will take many weeks before you feel close to your usual self again. You will need to keep activity light, avoid lifting, bending, straining or exerting yourself. Short walks that increase every few days is a good way to keep active. You can discuss returning to normal function with the team and the specialist nurses will go through a sperate leaflet about going home after surgery. They will also remain in telephone contact and have review clinics if there is a need to be

seen. The separate leaflet will describe signs and symptoms to observe for and who to contact if an issue arises.

In the longer term, you will be seen in a follow up clinic by the consultant or registrar. You will be advised of the histology of your tumour (the type of cells that the tumour is made up of) and any onward management plans including the need for further scans and treatments.

- **Radiotherapy.** Some patients with meningioma will require radiotherapy. This can be given as a primary treatment (first line of treatment) or in addition to previous surgery. There are many factors that will influence if you need radiotherapy and whether this will be recommended instead of or after surgery. This will be discussed with you.

Most patients who have had surgery for their tumour will not need to have radiotherapy. If radiotherapy is proposed, you will be referred to one of our MDT colleagues, a clinical oncologist. This does not mean this is a cancer but that they deliver radiotherapy to treat the tumour.

Radiotherapy comes in various forms and the best way of delivering radiotherapy and the type of radiotherapy you receive, will be discussed with you based upon your individual case and the discussions that the MDT have held.

It is likely that radiotherapy would be carried out as an outpatient meaning you don't stay overnight in hospital. It can be a single dose of highly targeted radiotherapy (SRS or stereotactic radiosurgery), or it can be a course of smaller daily doses over several weeks, with visits to the Christie Hospital or the Christie@Salford unit, Monday-Friday. Again, this will be discussed with you in detail.

To plan the radiotherapy, you will need to have an initial discussion with the oncologist to discuss the risks and benefits of the treatment.

Risks are similar (albeit usually lower) to that of surgery with regards the nerves and structures around the tumour. As this is not an open operation, there is no upfront risk of stroke or infection but there are some risks for both the immediate period and in the longer term. This can include changes to hearing and balance, facial weakness, facial sensory change, double vision and changes to swallow and voice. Each potential will be discussed on an individual basis.

There are some longer terms risks of any form of radiotherapy. These risks are very low but include increased risk of stroke, formation of other tumours in the area where radiotherapy has been delivered, delayed visual changes and a very small risk of malignant change within the tumour. This will all be discussed with you in clinic if radiotherapy is felt to be necessary and the benefits are felt to be much higher than any of the small potential risks.

Most patients will feel fatigued throughout and in the early period after radiotherapy treatment. This can persist for some weeks but is usually manageable. Some patients experience other side effects such as headache or nausea. These symptoms are usually tolerable and can be managed with medication.

The treatment is generally tolerated very well, and any side effects are often short lived.

How will I be followed up longer term?

It is common to remain a patient under the care of the skull base team for many years following diagnosis, regardless of whether you have treatment or not. This will include scans from time to time and the specific timing will be determined based upon your individual case. You may also require ongoing assessment by audiology, ophthalmology or other specialists depending on your symptoms.

You will have ongoing access to the specialist nursing team. They can be contacted for advice, symptom control, emotional and psychological support and general navigation of your care. Their numbers are at the end of the leaflet.

We may arrange clinic reviews from time to time but we also encourage patient initiated follow up as and when needed. This means you can contact us if you feel you want to see or speak to a member of the team.

Scans and results are usually reviewed in an MDT (multi-disciplinary team meeting-where all the specialists get together to discuss your case). We will always contact you following a scan to relay the results and plan. This may be a letter, a telephone call or a clinic review. **Please contact the service if you do not hear from us in the weeks following a scan.**

Contact Information

We understand that this can be a very anxious time. We are here to support you and advise you. Pleasecontact the team as needed.

Sr. Andrea Wadeson - Skull Base CNS

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Secretary to Mr Rutherford

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Secretary to Prof King

Tel: 0161 206 0631

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Tel: 0161 206 8340

Support can be found through the following sites:

https://brainstrust.org.uk/

https://www.thebraintumourcharity.org/

https://braintumourresearch.org/

https://www.basiccharity.org.uk/

Notes

Notes

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www.northerncarealliance.nhs.uk

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