MELBOURNE NEUROSURGERY

INFORMATION LEAFLET

PRIMARY BRAIN TUMOUR

Anaplastic Astrocytoma

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WHAT IS A PRIMARY BRAIN TUMOUR ?

This is a tumour that has grown from the tissue of the brain. The brain is made up of neurons (nerve cells) and the tissue that support them astrocytes (glial cells). Tumours can arise from either the neurons (neural tumour) or astrocytes (gliomas or astrocytomas). This leaflet is to discuss Glioblastoma Multiformae which is a type of astrocytoma.

What are the types of astrocytoma ?

Astocytoma	Low grade
Anaplastic Astrocytoma	Intermediate grade
Glioblastoma Multiformae (G.B.M.)	High grade

The astrocytoma can grow either slowly or very quickly and there is a range of growth in between. The slowest growing is the Astrocytoma. The fastest is the G.B.M. The Anaplastic astrocytoma is an intermediate tumour. Within each tumour group there is a range of growth. This means that not all Anaplastic astrocytomas will grow at the same rate. The type of astrocytoma is decided by the Pathologist (he looks at the tissue taken at surgery under the microscope).

HOW DO WE KNOW IT IS THERE ?

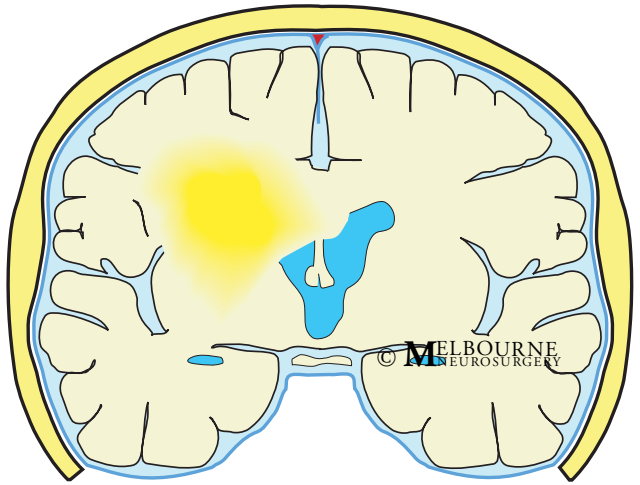
The tumour often causes problems with the brain
You may have had a seizure (fit)
It may be preventing part of the brain working(like a stroke)
It may be causing headaches.

The CAT scan is the first test and shows most tumours. If it does not show on the CAT scan an M.R.I. will be performed. Even when we know there is a tumour on the CAT scan we may still do an M.R.I. (more sensitive) to see how extensive the tumour is.

Drawing of tumour growth

IS IT A CANCER ?

The anaplastic astrocytoma is locally invasive and by the nature of its location behaves like a malignant tumour. It very rarely spreads to other parts of the body.
Unlike some tumours that grow as a lump (like a golf ball) the glioma has a tendency to also spread out into the surrounding brain. This can be likened to an octopus and its tenticles. It can be widespread within the brain.



What normally happens ?

You have normally been seen by your local doctor and he has organised a CT scan otherwise you have presented to the emergency department. If your local doctor discovered the lesion in the brain he will send you for an opinion. At this stage it is only presumed that the lesion is a glioma (it could be infection or something else). Surgery is nearly always needed to find out exactly what the lesion is and the best way to treat it. You may either have a biopsy or attempted total removal of the lesion depending on where it is in the brain.

You may be started on DEXAMETHASONE. This is a steroid drug that will reduce the swelling around the tumour. Some of its' side effects are to make you hungry and also to give you the hiccups. Your symptoms of e.g. headache / weakness usually improve on these. The other drug we may give you is an ANTI - EPILEPTIC. This is because the tumour may irritate the brain and cause a seizure (fit). The fit may have been the reason the lesion was found in the first place.

If you have not had an M.R.I. then this is organised. If you are not well and need urgent treatment the M.R.I. may be done after surgery and the CAT scan used for the procedure.

After the M.R.I:
(i) If the lesion is near the surface, in a relatively silent area of the brain and can be reached then surgical removal is planned.
(ii) If it is difficult to reach and remove safely then we woud plan a stereotactic biopsy (computer guided needle biopsy)to confirm the diagnosis.

Why surgery ?
The first step is to find out what type of tumour you have. The more that we can remove the less there is to treat with other methods.
If the tumour is large it may be compressing the brain to cause either weakness or drowsiness. Hopefully any weakness that you have is from compression and not invasion of the important parts of the brain.
In anaplastic astrocytoma because of the nature of the tumour and the way it grows the aim is to remove as much as is safe.
The bulk can usually be removed and this will remove the pressure on the surrounding brain. With this the swelling in the brain goes down substantially. If your weakness is due to pressure this usually gets better in the next few days after the surgery. The anaplstic astrocytoma can be difficult to tell from the surrounding brain and you may need more than one operation to gain good clearence ot the tumour.

The Surgery is usually a Craniotomy and Excision of the tumour (see Operation Leaflet CRANIOTOMY FOR GLIOMA).

After the surgery
Further treatment consists of Radiotherapy and Chemotherapy. The steroids are usually reduced to a small dose during your radiotherapy and then we try to remove them completely but some patients will require a small dose to continue. It is common to remain on your anti-convulsant. The first treatment is always radiotherapy. This is then followed by chemotherapy. Your treatment is generally co-ordinated by your neurosurgeon and your local doctor remains involved. You will have regular CAT scan and MRI scans through out your treatment. Sometimes there can be early regrowth/swelling during the radiotherapy. surgery may be needed again at this time or later.

RADIOTHERAPY

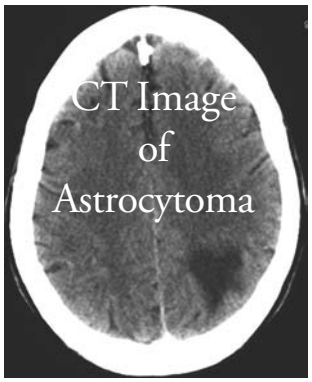
It is felt at this stage to be the most recognised and effective treatment. You will be referrred to a specialist Radiation Oncologist who will recommend the treatment course. Its aim is to slow down the growth of the tumour. It will not cure the tumour. The radiation causes hair loss/some dizziness and makes you drowsy. We try to get this started after you have recovered completely from surgery. The course depends on your age and location of the tumour and the radiation therapist will discuss this with you.

What happens if it comes back after radiotherapy ?

You can have further surgery/chemotherapy/radiosurgery but radiotherapy can usuallyonly be given once. If the tumour comes back quickly after the surgery/radiotherapy this is a bad sign. You will be followed up with CT scan at about 2-3 months. The timing of the next scan depends on the results of this. If your symtoms return early the scan is done earlier.

CHEMOTHERAPY

This is offered only after the radiotherapy has failed. You may have further surgery prior to chemotherapy (given by a Medical Oncologist). The commonest drug used today is **temozolmide**. This is taken orally as is mostly very well tolerated. It is given on a monthly cycle with its effect monitored by follow up imaging (CT or MRI). If this fails to produce a responser there are other drugs available but they are not recognised as being effective. Some of the treatment may be experimental and you may be offered these when the established drugs fail.



PROGNOSIS

Only very rarely will the tumour be cured. Typically it recurs at the margin of previous resection because of the tenticles of the tumour. At the time of diagnosis it is probably far more widespread than the MRI would suggest.

Most treatments are aimed at slowing down the growth of the tumour or relieving your symptoms.

The combination of surgery and radiotherapy is the mainstay of treatment with recent chemotherapy advances being encouraging.

Without any treatment the prognosis is poor. Surgery or Radiation alone show a big improvement but it is the combination of these two that produces the best responce. Chemotherapy will be effective in certain patients. The younger that you are at diagnosis the better the prognosis. It is common for anaplastic astrocytoma to change into a glioblastoma (high grade). It is difficult to predict the time you will survive as there is a spectrum of growth rate within the anaplastic astrocytoma group. Overall a sgnificant number (up to 40%) may not survive 2 years. The approach to prognosis is to watch your course and see how the tumour behaves.

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