**Mini chalk talks, Oncology CSU**

**St James’s Hospital, Leeds**

**Intended for CMT/FY trainees**

**CT scan shows a brain metastasis**

**Scenario**

A 40 year old woman with no past medical history was admitted with several episodes of right upper limb partial seizures. A CT scan was performed in A&E which showed a solitary enhancing lesion in the left cerebral hemisphere and she was transferred to the oncology assessment unit. She is now stable and GCS 15/15

PART 1

1. What is the differential diagnosis?

2. Outline your approach to management

3. What advice must be given to the patient?

PART 2

Staging CT scan showed a 4cm peripheral right lung mass but no nodal disease. The patient was commenced on steroids/antiepileptic medications. The following day, you are called to the ward as she has developed tonic clonic seizures.

4. Outline your approach to management

5. Despite repeated lorazepam, the seizures continue. What would be the most appropriate next step? Choose one of below.

a) Seizures in patient with lung cancer and brain metastasis- for best supportive care, commence midazolam via syringe driver

b) Patient has lung cancer but both lesions potentially treatable- Maintain airway, IV anti epileptics as per local protocol, liaise with ITU team/neurology SpR for further management of seizures.

**ANSWERS:**

1. Malignant (primary brain tumour or metastasis); infection/abscess

2.

* ABCDE to ensure patient is stable
* Bloods including glucose and calcium
* Commence steroids (lesion does not look like an abscess and no systemic signs of infection). Steroids treat tumour associated oedema.
* **Dexamethasone 8mg** daily plus PPI
* Commence antiepileptic medication (levetiracetam 500mg bd PO)
* Staging CT ie (CT Chest/Abdo/Pelvis) to look for primary
* Senior review - likely to need **MRI brain** if no evidence of primary site for metastasis.
* Will also need referral to BRAIN MDT (usually helpful to have basic investigations completed or at least planned so information available for MDT. The form can be found on Leeds Neurosurgery homepage. Brain MDT is at LGI on Wednesday mornings and includes neurosurgeons, radiologists, clinical oncologists, pathologists, CNS team)

3. She cannot drive and she must inform the DVLA.

4. ADBCE, oxygen, nasal airway if needed, IV access, IV lorazepam, check glucose, bloods, recovery position once seizures stop, senior review. Consider increasing steroid dose.

5. b) Patient has lung cancer but both lesions potentially treatable- IV anti epileptics as per local protocol, liaise with ITU team/neurology SpR for further management of seizures. **p.s. IF IN STATUS EPILEPTICUS, put out a crash call.**

**TAKE HOME LESSONS**

1. **Symptoms of brain metastases may be managed using steroids in the first instance (to treat tumour associated oedema) +/- anti-epileptic drugs. Documented driving advice is the responsibility of the clinician seeing the patient (including junior doctors). Plan for an MRI brain and refer to Brain MDT.**

**THINK : WHY DOES THE PATIENT NEED AN MRI BRAIN?**

CT is great for looking for bleeds/large tumours. It’s also better if Base of skull infiltration is suspected. It’s a good first line imaging (cheaper and faster)

BUT, MRI has better soft tissue delineation. It might show further metastases that were not visible on the original CT scan. MRI is also better at looking at the brain stem/cerebellum (there may be further metastases here…).

If the patient is being considered for radiotherapy such as gamma knife/surgery - the MDT will want an MRI brain.

**THINK :** **WHAT DOSE OF STEROIDS SHOULD I USE? SHOULD I USE PREDNISOLONE OR DEXAMETHASONE?**

**Excellent review article:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2808527/>

**“**It is recommended for patients who are symptomatic from metastatic brain disease that a starting dose of 4–8 mg/day of dexamethasone be considered, unless patients exhibit severe symptoms consistent with increased intracranial pressure. In these patients it is recommended that higher doses such as 16 mg/day or more be considered. (Level 3 recommendation)”

Seizures are are uncommon sign of raised ICP. Usual symptoms: intractable headaches, pulsatile tinnitus, nausea and vomiting, blurred vision, low GCS. Signs: Pappiloedema on fundoscopy and often the CT report might suggest raised ICP. Look for things like large midline shifts/risk of brain herniation. In these cases start 16mg of dexamethasone STAT.

Dexamethasone has a long half life of 48 hours and less mineralocorticoid activity, and hence preferred. Ensure patients have a weaning plan, usually wean slowly over 2 weeks, but often longer duration of wean. Discuss with team. \*Remember radiotherapy can cause local inflammation and can temporarily worsen oedema in the acute setting.\*

**2. Patients with limited sites of metastatic disease may still have a good prognosis if they are able to receive treatment for these lesions.**

Cancer used to be broadly divided into local, locally advanced (primary tumour + regional lymph nodes) or metastatic.

LOCAL + LOCALLY ADVANCED - POTENTIALLY curable

METASTATIC - Incurable. Disease control and symptom control a priority.

**Question- What about: Oligo-metastatic disease = ?Is this Curable**

There is now a new concept of oligometastases (oligo = few, usually <5) Newer treatment modalities like SABR (Stereotactic ablative radiotherapy) can be targeted to tumours/metastases in different sites of the body (e.g. lung, spine, lymph nodes, adrenals) or Gamma knife/SRS (Stereotactic Radiosurgery) for brain metastases/tumours and can potentially ‘cure’ the cancer. Therefore, do not assume that patient is not for escalation. ASK.

Further, metastatic cancers can behave in different ways, metastatic prostate cancer at diagnosis suggests a median survival of 5 years, metastatic pancreatic cancer/oesophageal cancer is a poorer prognosis of approx 6 months.

BUT, new treatments such as immunotherapy have dramatically changed the prognosis of certain types of metastatic cancer such as melanoma (from a median survival of 9 months in the pre immunotherapy era to a median survival of 4 years) and similarly the landscape is changing for lung cancers which respond to immunotherapy/targeted therapy.

IN SUMMARY - DON’T ASSUME the patient is for best supportive care. ASK an ONCOLOGIST.