CNS CANCER CASES

CNS Cancer Case 1

A 35-year-old man is referred to the CNS multidisciplinary clinic for consideration of treatment options regarding a recently diagnosed WHO grade III oligoastrocytoma.

He presented with headaches. An MRI head confirmed a 3 cm left frontal mass.

Neurosurgery recommended proceeding directly to surgical resection. He underwent a gross total resection and pathology revealed a grade III oligoastrocytoma. Post-operative MRI showed no evidence of residual tumour or enhancement.

He recovered from surgery and has no significant neurological deficit.

1. When might the neurosurgeon recommend biopsy rather than surgical resection?
2. What treatment options should be discussed with this patient?
3. What is his prognosis?
4. What is the significance of 1p/19q co-deletion?
5. Is there a role for prophylactic anti-seizure medication?
6. What are the main toxicities of temozolomide? Are prophylactic antibiotics necessary?

He proceeds with concurrent treatment with temozolomide and radiation over six weeks and tolerated this treatment very well.

7. What treatment might be offered after concurrent treatment?
8. What follow-up is required at the completion of treatment?

Two years after completion of treatment, his headaches worsen again, and repeat MRI scan of the brain confirms a recurrence at the surgical site.

9. How frequently should MRI of the brain be performed when following a patient after completion of adjuvant therapy?
10. Do patients with primary CNS tumours require staging investigations other than repeat MRI if/when they recur?
11. What options might be available for treatment of recurrence?
12. Is there any role for further radiation?
13. Would temozolomide be offered in the setting of recurrence?
14. Are there other systemic therapy options?

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CNS Cancer Case 2

A 55-year-old previously healthy woman presents to ER after a generalized seizure. CT head shows a 3.5 cm enhancing left frontal-parietal tumour with vasogenic edema. She is started on levetiracetam and dexamethasone and then referred to a neurosurgeon who recommends a surgical resection of the tumour after reviewing the MRI. Pathology from a subtotal resection confirms glioblastoma IDH-wildtype.

1. Why do you think the surgeon did a subtotal resection?
2. How are glioblastomas, astrocytomas and oligodendrogliomas related? What molecular markers and genetic testing are used to further classify these gliomas in the WHO 2016 classification of CNS tumors?

She recovered from surgery without significant complications and has a Karnofsky score of 80. Post-op MRI confirms residual tumour at the resection site.

3. What treatment options are available to this patient?
4. What is the role of radiation and how is it delivered?
5. What toxicities would you expect to see with adjuvant chemotherapy and radiation? Which chemotherapy is given concurrently with radiation in this situation? What are the side effects?

She tolerated concurrent chemoradiation very well but the MRI one month post treatment reports increased vasogenic edema and tumour progression. She remains well with no neurologic symptoms or headache.

6. What is pseudoprogression? How is it treated? Should treatment be discontinued?
7. What other radiologic imaging may be useful to clarify the situation?
8. How would your treatment recommendations differ if this patient was over 65 years old with an excellent performance status?
9. What is the median survival for glioblastoma with and without radiation and chemotherapy? What is MGMT and how do we think this affects survival?
10. What options are available for progression or recurrence of disease? (surgical/radiation-cyberknife/systemic therapy) What is the role of bevacizumab in these patients?

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