Primary Hemangioblastoma - a case report

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Introduction

- Hemangioblastomas are **rare, benign, highly vascularized central nervous system** tumors.[1]
- The mass effect of hemangioblastomas on surrounding structures often cause neurologic symptoms like **headache, nausea and vomiting**, or **motor or sensory deficits** depending on their location.[1]
- Hemangioblastomas contribute to approximately **2% of all CNS tumors** and have an incidence rate of **0.141 per 100,000** person-years.[2]
- While often sporadic, hemangioblastomas can be associated with the genetic syndrome **von Hippel-Lindau syndrome**, where multiple hemangioblastomas appear in the spinal cord, with other malignant tumors like renal cell carcinomas and pheochromocytomas.[1]

Discussion

- The preferred diagnostic method for assessing hemangioblastomas is **gadolinium-enhanced magnetic resonance imaging** [4]
- The clinical management of a hemangioblastoma often **depends on the anatomical location** of the lesion.[4]
- **Surgical resection with preoperative angiogram and embolization** is the primary definitive modality of treatment, especially in masses that are sporadic, isolated, and not associated with von Hippel-Lindau disease.[4]
- **Stereotactic radiosurgery** is the promising treatment method that is most indicated in cases of multiple tumors or in anatomically difficult locations [5,6]
- **Genetic testing** for von Hippel-Lindau disease is recommended in patients with multiple hemangioblastomas, age of diagnosis less than thirty years, or if patient with a hemangioblastoma has family history of von-Hippel Lindau disease.[7]

Case Description

History

- Thirty eight year old Caucasian male with no pertinent past medical history
- **One month of sharp, constant headache** at the top and sides of his head that fluctuates in pain severity, at worst is 10/10 and not relieved by over the counter analgesics
- Associated **nausea, photophobia, lightheadedness** and **transient vision loss** when the pain is most severe
- Denies recent head trauma or nuchal rigidity, chest pain, SOB, vomiting, fever or chills, vertigo, or vision changes at baseline
- *Past medical history* - none
- *Past surgical history* - none
- *Medications* - none
- *Allergies* - none
- *Family history* - none
- *Social history* - Pt works as truck driver, but is currently on paternity leave. Married with a three month old boy. Denies smoking, drinking, illicit drug use. Exercises regularly, eats a healthy diet.
- *Review of systems* - unremarkable

Physical Exam

- Alert and oriented x3, CN II-XII intact. Strength 5/5 throughout, sensory intact, reflexes 2+ and symmetric, coordination and gait normal
- Cardiac, Pulmonary, Abdominal exams all unremarkable
- Vital signs within normal limits

Diagnostic Testing

- *Computer Tomography of Head without contrast* - **cystic lesion** measuring up to **4.4 cm** in the **RIGHT cerebellar hemisphere**, with surrounding edema.
- *Magnetic Resonance Imaging of Brain with and without contrast* - intra-axial slightly irregular minimally septated heterogeneous lesion with thick-walled peripherally enhancing nodular cystic lesion in the right cerebellum. Likely hemangioblastoma.

Fig 1. Computer Tomography - Axial View

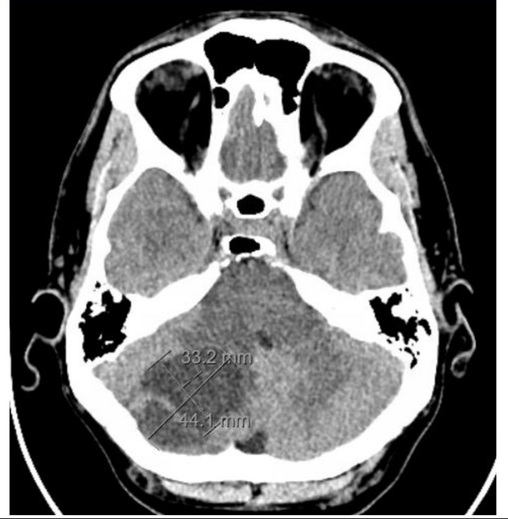
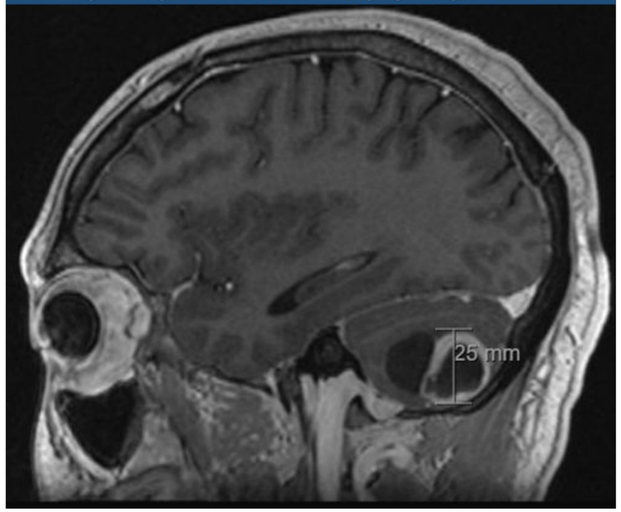


Fig 2. Magnetic Resonance Imaging - Sagittal View



Patient Outcome

- The patient was admitted to neurosurgery and underwent a **suboccipital craniotomy** for tumor resection.
- The procedure was tolerated well and the patient was discharged four days later on dexamethasone 4 mg daily with follow up with neuro-oncology without major complications.
- The patient continues to have intractable headaches, and has visited the emergency room twice in the two months post-surgery for pain control and further evaluation.

Conclusion

- Hemangioblastomas are rare, benign nervous system tumors.
- In the cerebellar region, hemangioblastomas often present with headache and associated nausea.
- The absence of risk factors or comorbid conditions does not exclude the possibility of a hemangioblastoma.
- Magnetic resonance imaging is the primary diagnostic tool, and primary resection is the mainstay of treatment.

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