

Parasagittal meningioma

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[Harvey Williams Cushing](#) and [Louise Eisenhardt](#) defined parasagittal [meningioma](#) as one that fills the parasagittal angle with no [brain tissue](#) between the tumor and [superior sagittal sinus](#). Sometimes, it invade partially or completely the [superior sagittal sinus](#) ¹⁾.

Classification

[Parasagittal meningioma classification](#).

History

During excavation in [1931](#) by Riek in the cave of Vogelherd close to Stetten in the Lone Valley in southwestern Germany there was found an anatomically modern human skull (called: "Stetten 2") dated 32500 years before present. The skull was excavated without postcranial skeleton in the cave and showed no signs of burial. Paleopathological examinations of the calvarium reveals skeletal abnormalities that indicate parasagittal meningioma next to the bregma. Paracentral Meningiomas cause seizures and focal weakness, followed by headache. These observations are discussed in the context of modern medical knowledge. Our theory integrated archaeological, anthropological and paleopathological knowledge and helped to create the understanding of Paleolithic and earliest modern man knew regarding the "brain" and illness ²⁾.

[Meningiomas](#) frequently invade cerebral venous sinuses, especially [parasagittal meningioma](#) to [superior sagittal sinus](#). A frontal parasagittal meningioma could invade directly the internal jugular vein ³⁾.

Epidemiology

85-90% of the meningiomas are supratentorial. 45% parasagittal, convexities.

Clinical features

[Parasagittal meningioma clinical features](#)

Diagnosis

[Parasagittal meningioma diagnosis.](#)

Differential diagnosis

[Parasagittal Meningioma Differential Diagnosis.](#)

Separate tumors

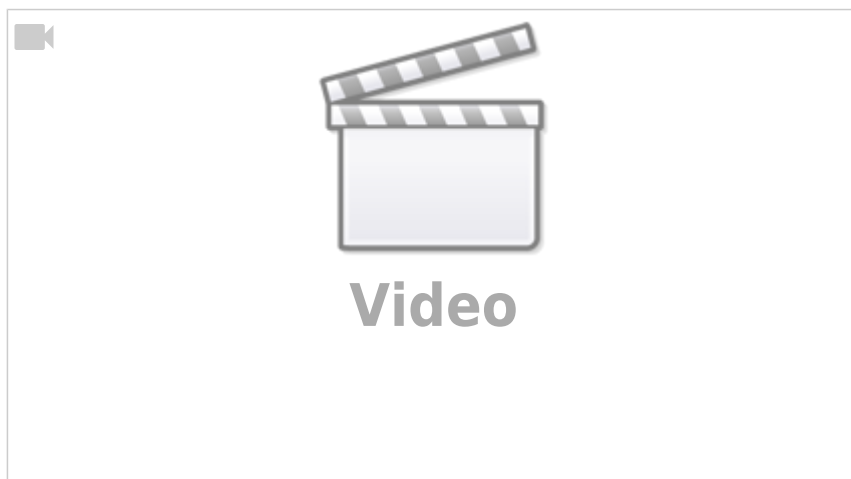
A 70-year-old woman with an asymptomatic parasagittal meningioma had been under observation with follow-up imaging for 2 years. She gradually developed motor weakness in the left hand. Magnetic resonance (MR) imaging disclosed a newly developed well-enhanced area in the cerebral parenchyma adjacent to the stable original meningioma. The new lesion was enhanced more intensely and less well demarcated. We suspected that the meningioma had enlarged into the brain parenchyma, although MR imaging suggested a border between the extra-axial and intra-axial portions. Craniotomy was performed. Two separate tumors were identified with quite different histological features. The extra-axial tumor was identified as benign transitional meningioma and the intra-axial tumor as diffuse large cell type malignant lymphoma. Immunostaining revealed the lymphoma had B cell origin. After surgical resection, stereotactic radiosurgery was performed for the residual lymphoma. The original site of the lymphoma remained free from relapse, but another lesion developed in the right frontal lobe 3 months later and chemotherapy was performed. The main concern for follow-up imaging of [asymptomatic meningioma](#) without surgical resection is growth of the meningioma. However, development of new different tumors is possible, although thought to be rare ⁴⁾

Simultaneous detection of an intracranial meningioma with a pituitary tumour prior to radiotherapy is an extremely uncommon occurrence. Mathuriya et al., have managed an elderly acromegalic lady with an acidophilic pituitary neuroendocrine tumor, who also harboured an asymptomatic anterior third parasagittal meningioma. There were no features of neurofibromatosis. Both tumours were concurrently excised ⁵⁾.

Treatment

[Parasagittal meningioma treatment.](#)

Videos



Complications

The radical resection of [parasagittal meningiomas](#) without [complications](#) and [recurrences](#) is the goal of the neurosurgeon.

Skudas and Tamasauskas retrospectively reviewed 132 patients with parasagittal meningiomas operated in the Department of Neurosurgery during the period of 1995-2000. Forty-four (33.3%) meningiomas invaded the superior sagittal sinus (SSS) and partially or totally obturated it. One hundred-five (79.5%) meningiomas were removed totally and post-surgery results of 111 (84.1%) patients were good. On discharge 17 (12.9%) were in poor condition, and 4 (3%) patients died. Postoperative complications occurred in 46 (34.8%) patients ⁶⁾.

Venous Infarction

see [Venous infarction](#)

Venous air embolism (VAE) during an elective craniotomy for parasagittal meningioma resection. The surgery was done in the supine position with slightly elevated head position. VAE was provisionally diagnosed by sudden decreased in the end tidal carbon dioxide pressure from 34 to 18 mmHg, followed by marked hypotension and atrial fibrillation. Prompt central venous blood aspiration, aggressive resuscitation and inotropic support managed to stabilize the patient. Post operatively, he was admitted in neuro intensive care unit and made a good recovery without serious complications ⁷⁾.

Intraoperative fatal pulmonary embolism ⁸⁾.

Paraparesis can occur as a primary presentation of brain pathology at the motor strip along the parasagittal region. It could also occur as a neurological complication especially following resection of parasagittal meningioma with infiltration of the superior sagittal sinus (SSS). We report a case of a complete paraparesis immediately following resection of bilateral parasagittal meningioma with infiltration of the middle third of the SSS. A gradual improvement in neurological recovery and functional outcome was observed over a period of one year after undergoing an intensive neurorehabilitation program beginning from the acute inpatient phase post surgery ⁹⁾.

Hemostatic agents, routinely used in neurosurgery to achieve intraoperative hemostasis may cause foreign body reaction. These may produce clinically symptomatic and radiologically apparent mass lesions. It should be kept in mind that retained cotton or rayon materials may mimic the appearance of a tumor or an abscess on MRI scan, especially at sides of previous craniotomies. Here we report a case of intracranial foreign body granuloma which occurred due to remained cottonoid after removal of a parasagittal meningioma. This entity was also documented by MR imaging technics included diffusion weighted, flair and ADC mapping ¹⁰⁾.

Recurrence

Recurrent aggressive falcine meningiomas are uncommon tumors that recur despite receiving extensive surgery and radiation therapy (RT).

Abou Al-Shaar et al have utilized brachytherapy as a salvage treatment in two such patients with a unique implantation technique. Both patients had recurrence of WHO Grade II falcine meningiomas despite multiple prior surgical and RT treatments. Radioactive I-125 seeds were made into strands and sutured into a mesh implant, with 1 cm spacing, in a size appropriate to cover the cavity and region of susceptible falcine dura. Following resection the vicryl mesh was implanted and fixed to the margins of the falx. Implantation in this interhemispheric space provides good dose conformality with targeting of at-risk tissue and minimal radiation exposure to normal neural tissues. The patients are recurrence free 31 and 10 months after brachytherapy treatment. Brachytherapy was an effective salvage treatment for the recurrent aggressive falcine meningiomas in our two patients ¹¹⁾.

Case series

[Parasagittal meningioma case series.](#)

Case reports

[Parasagittal meningioma case reports.](#)

Unclassified

[Parasagittal meningioma unclassified.](#)

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