

## Remote supratentorial hemorrhage after posterior fossa surgery: A brief case report

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### Abstract

The supratentorial hemorrhage after posterior fossa surgery is an unusual but delicate complication that carries high mortality and morbidity. A 50 year old woman presented vertigo 6 months of evolution, which worsened in the last 2 months accompanied by ataxia. She showed left cerebellar signs, had no focal motor or sensory deficits. A brain MRI identified cerebellopontine angle lesion with mass effect. The patient was treated on suboccipital craniectomy and resection of right posterior fossa tumor, the histopathological diagnosis was consistent with typical meningioma. (WHO Class I).

The postoperative period was satisfactory. A month later, presented clinical symptoms of right-sided hemiparesis, brain CT revealed left frontal supratentorial hematoma, receiving conservative management. Patient was

discharged after 10 days. Reports in the literature on this rare complication, detailed cases where the hematoma was presented in hours to days. To our knowledge this is the first report in the literature of supratentorial hemorrhage and posterior fossa surgery one month after the surgical procedure has been performed.

**Key words:** Meningioma, posterior fossa surgery, supratentorial hemorrhage, Neurosurgery

### Introduction

Remote supratentorial hematoma after posterior fossa surgery for the removal of a space-occupying lesion is a rare but dramatic and dreaded complication, carrying significant morbidity and mortality. We describe a rare complication of extensive supratentorial hemorrhage following posterior fossa surgery; review the relevant

literature and discuss the possible cause of hemorrhage in the present case.

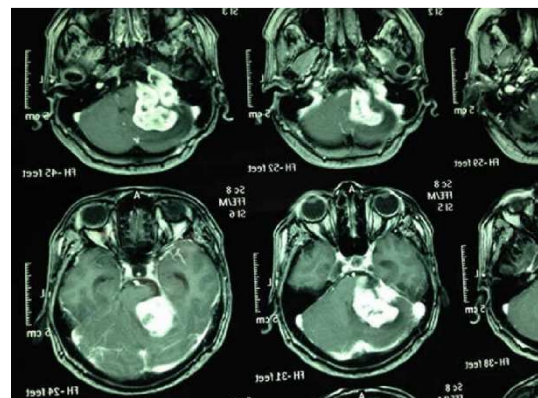
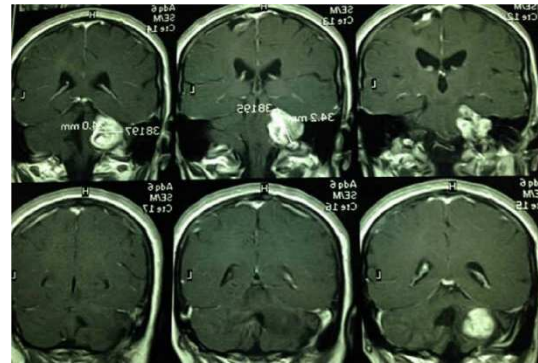
**Case report**

A 50-year-old woman had a history of headache and progressive ataxia over 1 year. Neurological examination showed a horizontal nystagmus, a slight gait ataxia, right dysmetria and bilaterally papilledema. CT scan also revealed a right meningioma of 6x5x5,5 cm in size in the right posterior fossa with moderate hydrocephalus (Figure 1). Preoperative right carotid and right vertebral artery angiographic scan has been done. The patient underwent suboccipital craniectomy in sitting position and ventricular drainage has been performed to prevent air embolism. So intraoperative course was uneventful and tumor removed totally [Figure - 2]. In early postoperative neurological examination was normal but after six hours she became somnolent and developed a hemiplegia on the left site.

A new CT scan revealed a hyperdense lesion of 2x1,5x4 cm in size in the right fronto-parietal region [Figure - 3]. The patient was treated conservatively and the patient's neurologic state improved in five days. CT scan revealed a hypodense lesion in the right fronto-parietal region in subsequent second month.

**Discussion**

Supratentorial intracerebral hemorrhage is uncommon after posterior fossa surgery.



Figures 1 and 2 - Preoperative brain T1W MRI contrast images showing large posterior fossa tumor on right side with mass effect



Figure 3 - Postoperative CT scan revealed a hyperdense lesion of 2x1,5x4

The mechanism for producing the bleeding is not entirely certain, but it is proposed that in the case where the sitting position is used, a

decrease of cerebral blood flow and then cerebral ischemia occurs. By switching the position after surgery hyperperfusion areas leads to bleeding in ischemic areas. Heines et

al reported 5 supratentorial hemorrhages after posterior fossa surgery in 825 patients firstly. The patients had neither coagulopathy nor predisposant factors. [1,2]

**TABLE 1**

**Summary of published supratentorial intracerebral hemorrhage after posterior fossa surgery**

Author and year	Age/Gender	Diagnosis	Localization	POP interval	Sequela
Haines, 1978	65/F	Neuralgia V right	Right Occipital	4 hrs	--
	55/F	Neuralgia IX right	Ringht basal ganglia	45 min	
	41/F	Neuralgia V right	Right Frontoparietal	inmediate	
	64/F	An. painful right	Left frontal	18 horas	
	62/F	Schwanoma VIII left	Intraventricular	Inmediate	
Standefer, 1984	59/--	Meningioma	Basal ganglia	7 days	--
Harders, 1985	44/F	Meningioma	Left frontoparietal	--	--
	51/F	Schwnoma VIII	Bilateral frontal	--	
	58/M	Meningioma	Left parietal	--	
Seiler, 1986	66/F	Schwnoma VIII	Right Parietal	Inmediate	--
	64/F	Right	Left parietal	3 hrs	
	59/F	Right meningioma	Right occipital	24 hrs	
		Right Schwnoma			
Kalfas, 1988	--	--	--	--	--
Bucciero, 1991	46/F	Hemangioblastoma	Left Temporoparietal	6 hrs	--
Prieto, 1993	45/F	Left Schwnoma VIII	Left Frontoparietal	16 hrs	--
Tondon, 2004	30/F	schwannomas	Left Parietaloccipital	24 hrs	Died
	50/F	Astrocitoma	Basal ganglia	6 hrs	
Kalkan, 2006	63/F	Meningioma	--	6 hrs	--
Agrawal, 2010	47/F	---	Right Temporal	3 hrs	--
Moscote, 2014	50/F	Meningioma	Left frontal	30 days	Right hemiparesis

**F: female M: male**

Our patient underwent tumor resection in the benck park position. No ventricular drain was placed. In the preoperative and postoperative periods coagulation parameters were normal. The values of blood pressure

preoperatively, intraoperatively and postoperatively were normal. Bleeding was probably caused by the rupture of perforating veins of the basal ganglia or in the subependymal region.

## Conclusion

The supratentorial hemorrhage after posterior fossa surgery is an unusual but delicate complication that carries high mortality and morbidity. Reports in the literature on this rare complication, evidence cases where the hematoma was presented in hours to days. (3, 4, 5, 6, 7, 8, 9, 10). To our knowledge this is the first report in the literature of supratentorial hemorrhage and posterior fossa surgery one month after the surgical procedure has been performed.

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