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 discus the possible cause of hemorrhage in the present case.

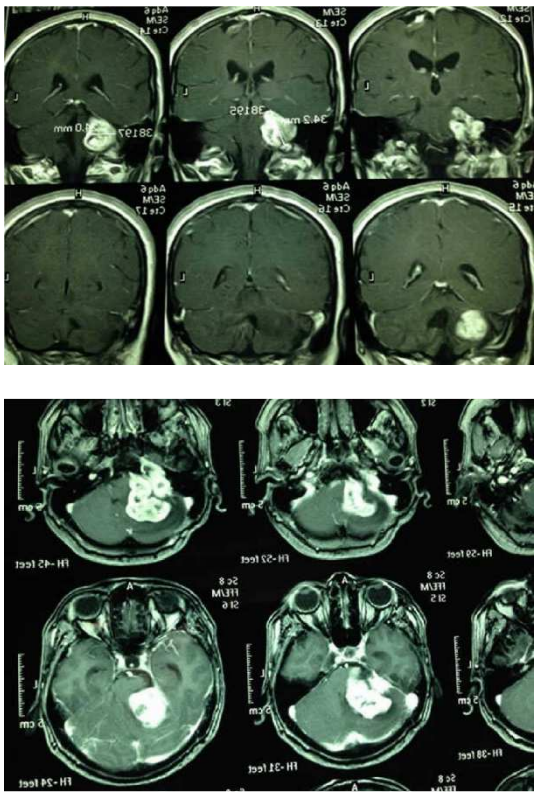
Case report

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.

Discusion

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

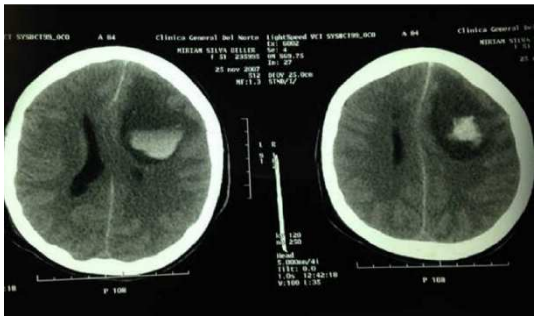


Figure 3 - Postoperative CT scan revealed a hyperdense lesion of 2x1,5x4

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 55/F 41/F 64/F 62/F	**Neuralgia V right** **Neuralgia IX right** **Neuralgia V right** **An. painful right** **Schwanoma VIII left**	Right Occipital Ringht basal ganglia Right Frontoparietal Left frontal Intraventricular	4 hrs 45 min inmediate 18 horas Inmediate	--
Standefer, 1984	59/--	Meningioma	Basal ganglia	7 days	--
Harders, 1985	44/F 51/F 58/M	Meningioma Schwnoma VIII Meningioma	Left frontoparietal Bilateral frontal Left parietal	-- -- --	--
Seiler, 1986	66/F 64/F 59/F	Schwnoma VIII Right Right meningioma Right Schwnoma	Right Parietal Left parietal Right occipital	Inmediate 3 hrs 24 hrs	--
Kalfas, 1988	--	--	--	--	--
Bucciero, 1991	46/F	Hemangioblastoma	Left Temporoparietal	6 hrs	--
Prieto, 1993	**4**5/F	Left Schwnoma VIII	Left Frontoparietal	16 hrs	--
Tondon, 2004	**30/F** **50/F**	schwannomas Astrocitoma	Left Parietaloccipital Basal ganglia	24 hrs 6 hrs	Died Died
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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