Haeorrhage distant to the operated site is an extremely rare complication. It can be self-limiting if small in size but can be devastating and potentially fatal depending on its size. Number of factors has been implicated for the causation of remote cerebellar haemorrhage (RCH). The exact pathophysiology however is obscure. We present a case operated for suprasellar pathology resulting to RCH and discuss the various hypotheses for its genesis, which have been discussed in various literatures over the year.

Case Report:

A 40-year-old gentleman was admitted to our hospital with insidious onset, gradually progressive, painless diminution in vision starting involving both eyes, associated with frontal headache and loss of libido for 6 months. His blood pressure and sugar levels were in good control. On examination, he had bitemporal loss of vision with diminished acuity of Jaeger’s J3 on left and Jaeger’s J16 on right eye. Rest of the neurological examinations were within normal range.

Postoperative remote cerebellar haemorrhage occurring distant to the operated site as its name suggests is a rare though recognized entity in neurosurgical practice. It can be potentially devastating. Over 100 cases have been described in various literatures over the years. It is postulated to be due to CSF over drainage, has been the most popular theory behind its occurrence. We report a patient who underwent pterional craniotomy for craniopharyngioma, who deteriorated 12 hours following awakening after the surgery, the cause being remote cerebellar haemorrhage.

Keywords: Craniopharyngioma, Remote cerebellar haemorrhage, CSF drainage, Cerebellar sagging, Zebra sign

Magnetic Resonance Imaging (MRI) scan revealed heterogeneously enhancing suprasellar mass without sellar floor enlargement. There was no evidence of hydrocephalus. Preliminary radiological impression of craniopharyngioma was made (as shown in figure 1). Hormonal assay was normal for pituitary hormones. Preoperative visual charting for field documentation showed bitemporal hemianopia. His platelet count and coagulation profile were normal. The patient was started on Dexamethasone preoperatively.

He was operated through standard pterional craniotomy. Tumor was dissected from prechiasmatic, optico carotid, carotico tentorial and trans lamina terminalis corridors. Operative duration was 4 hours. The patient was woken up immediately post operatively and was transferred to intensive care. There was no visual deterioration. Patient however had acute drop in GCS 12 hours following the surgery and had fixed dilated pupils with preserved gag reflex. Postoperative computed tomography (CT) scan showed bilateral cerebellar haemorrhage (as shown in figure 2). Urgent wide midline posterior fossa craniectomy with foramen magnum decompression and evacuation of
clot was carried out. He was managed in Intensive Care Unit (ICU) with ventilator support for few days but he finally succumbed.

**Discussion:**

Postoperative hematoma at the operated site is a common occurrence and is related to inadequate haemostasis. Hematoma however, far from the operated site is a rare entity.\(^{13}\)

**Figure 1:** Preoperative MRI scan showing suprasellar lesion, suggestive of craniopharyngioma.

**Figure 2:** Post-operative scan immediately after deterioration of the patient showing bilateral cerebellar haemorrhage. A typical streaky, curvilinear bleeding pattern with blood in the cerebellar sulci facing the tentorium is seen.

Remote cerebellar haemorrhage (RCH) by definition, is a bleed into the cerebellar parenchyma secondary to neurosurgical intervention at site anatomically unrelated to it.\(^{5}\) The reported incidence ranges from 0.08-0.6%\(^{7,14}\). It has been reported in conjunction to various neurosurgical procedures, some of which are aneurysm clipping, temporal lobectomy, spinal surgery, hematoma evacuation, and tumour removal. So far, 4 cases of RCH have been described in association of craniopharyngioma removal in

<table>
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<td>Decompressive surgery</td>
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<td>Conservative therapy</td>
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**Table 1:** Summary of 5 cases of remote cerebellar haemorrhage following removal of craniopharyngioma\(^{6,9,10,15}\)
Remote cerebellar hemorrhage

In our case, the patient did not have intraoperative paroxysmal fluctuation of blood pressure or derangement of coagulation parameters. He had received 100 ml of 20% mannitol while opening the dura mater for brain relaxation. Intraoperative CSF drainage from the ventricle was there while opening the lamina terminalis. This probably underscores the importance of gradual decompression to maintain the intracranial pressure within the range.

Conclusion

RCH is a rare but potentially fatal postoperative complication. The precise patho-mechanism is not known. Loss of large volume of CSF especially when the tumour size is large and dehydration due to osmotic diuretics can cause significant brain shift and traction on cerebellar veins to cause infarction and hemorrhagic transformation leading to this rare complication. Timely diagnosis and sensitization of this complication may prevent the dreaded complications as though most smaller hematomas are self-limiting, larger ones might be life threatening.

References

Bishokarma et al


