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An Asymptomatic, Supratentorial, Remote Epidural Hematoma Following Posterior Fossa Surgery

CASE REPORT

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ABSTRACT

An epidural hematoma (EDH) following posterior fossa surgery is extremely rarely reported. We report the case of a 49-year-old woman diagnosed with cerebellar lesions and hydrocephalus. The patient underwent left paramedian suboccipital craniotomy, and total resection of the lesion was performed. After the surgery, the patient was transferred to the intensive care unit with a Glasgow coma score of 15. Because the patient was neurologically stable, computed tomography (CT) was performed on the first postoperative day. A right, frontal, large EDH was seen on the CT image without any complaint and neurological deterioration. EDH evacuation was performed by right frontal craniotomy, and the patient was discharged with full recovery. This case reinforces the importance of a close follow-up and the early imaging of posterior fossa tumors, particularly with hydrocephalus, for not overlooking this rare, but serious, complication, even if a patient is clinically silent.

Keywords: Epidural, posterior fossa, supratentorial, remote, hematoma

INTRODUCTION

An epidural hematoma (EDH) following posterior fossa surgery is a rare, but hazardous, complication (1-3). It is mostly diagnosed with sudden neurological deterioration. We present a very rare case of a 49-year-old patient operated on posterior fossa tumor and then an asymptomatic, remote, supratentorial EDH is seen on postoperative computed tomography (CT). This case brings attention to this infrequent, but fatal, complication that postoperative early monitoring and close follow-up are essential despite in neurological intact patients.

CASE REPORT

A 49-year-old woman was admitted to an outpatient clinic with a history of headache, vertigo, and nausea for 20 years. A neurological examination revealed a positive cerebellar test result on the left side. Magnetic resonance imaging revealed a contrast-enhancing tumor with a 4 cm diameter on the left cerebellum and peripheral edema that is more distinctive near the fourth ventricle and causes mild, obstructive chronic hydrocephalus (Figure 1). There was no history of diabetes, hypertension, or coagulation disorders. The patient underwent left paramedian suboccipital craniotomy with a hockey stick incision in the prone position, and total resection of the lesion was performed. The intraoperative course was uneventful, and excessive loss of cerebrospinal fluid (CSF) was avoided. After the surgery, the patient was transferred to an intensive care unit (ICU) with a Glasgow coma score of 15. Because the patient was neurologically stable, CT was performed on the first postoperative day. A right, frontal, large EDH was detected without any complaint and neurological deterioration (Figure 2). EDH evacuation was performed by right frontal craniotomy. CT scans following a second surgery revealed complete evacuation of the EDH (Figure 3). The patient was discharged with full recovery in a week.

DISCUSSION

Remote hemorrhages, mostly of intracerebral or to a much lesser extent of extradural origin, are rare, but grueling, diseases observed in neurosurgical practice. The rarity makes this phenomenon an unknown and trouble in handling and treating in a standard manner. Despite this handicap, unexpected neurological deterioration as a clinical manifestation helps clinicians get suspicious about postoperative complications, particularly remote hemorrhages.

Several mechanisms have been reported to clarify these postsurgical remote hemorrhages. Coagulopathy as a risk in a remote hemorrhage has been reported in the literature, in which the supratentorial hemorrhage developed adjacent to the lesion (1). However, because coagulation parameters were altered after detecting the hematoma, it was difficult to determine whether this was a consumption coagulopathy or the cause of remote hemorrhage. Coagulopathy

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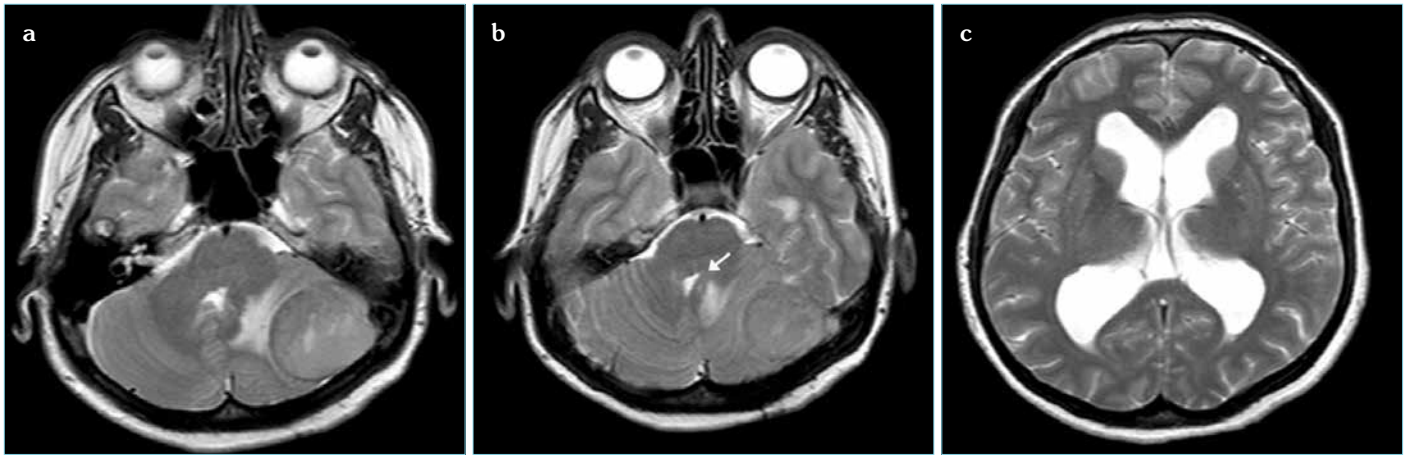

Figure 1. a-c. T2-weighted axial magnetic resonance images of the patient revealed (a) a left cerebellar heterogeneous lesion with peripheral edema, (b) significant compression of the fourth ventricle (white arrow), and (c) mild chronic hydrocephalus

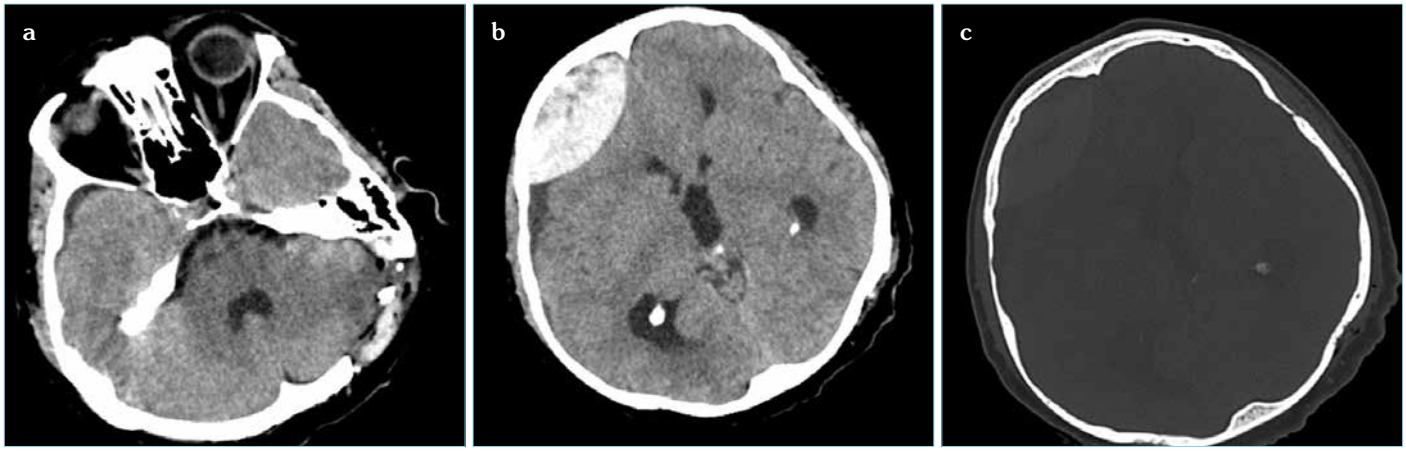

Figure 2. a-c. A postoperative CT scan demonstrated (a) complete resection of the tumor and (b) a large, frontal EDH with compression of the right lateral ventricle and midline shift but (c) no signs of cranial fracture
CT: computed tomography; EDH: epidural hematoma

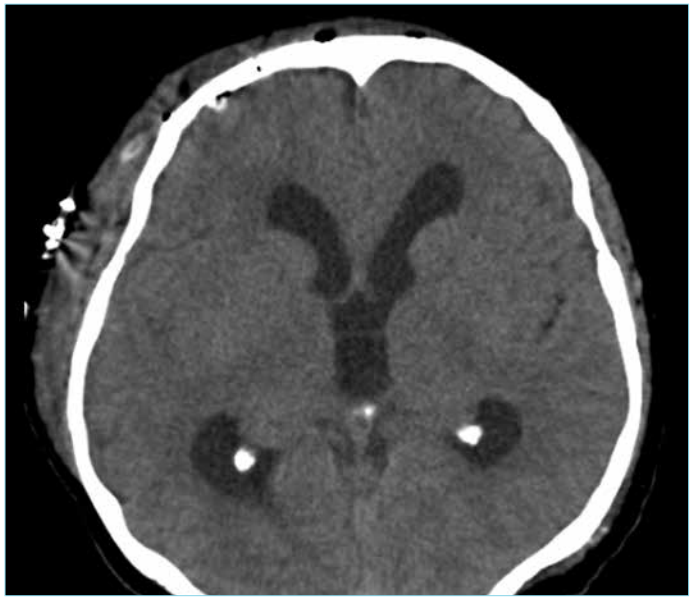

Figure 3. A postoperative CT scan of the patient following a second surgery showing normal radiological findings
CT: computed tomography

was postulated to be a possible predisposing factor for hemorrhage formation after a supratentorial lesion. Our patient had no abnormal coagulation parameters and after hematoma evacuation. This evidence ruled out coagulopathy as the cause of EDH in our case.

Patient's position in posterior fossa surgery is another entity to clarify the mechanism of a remote hemorrhage. Stretching of the subcortical veins due to changes in intracranial dynamics in the sitting position may cause postoperative hemorrhages (2). In contrast with this suggestion, our patient was operated in the prone position. The possibility of occlusion of the carotid or vertebral vessels in the neck by improper positioning of the head leads to intraoperative infarction and a hemorrhage within the infarcted brain after repositioning the patient (2-4). A remote EDH of idiopathic origin has also been reported (5). Another probable cause is the use of pins for rigid fixation just before surgery. This option is excluded by the absence of the pins revealed in the control CT. As reported in the literature, the existence of hydrocephalus, particularly in posterior fossa tumors, is another cause of a remote hemorrhage, which we believe is the cause of the mechanism of action in our patient. A decrease in ventricular pressure during posterior fossa surgery was postulated in a report on five cases (6). Another report of a case on bifrontal EDH

after posterior fossa surgery was predicted in patients with noncommunicating hydrocephalus. A patient with chronic hydrocephalus due to a choroid plexus papilloma in which four separate supratentorial EDHs developed and were surgically evacuated was reported (7). A 5-year-old girl with a posterior fossa tumor and a raised intracranial pressure due to obstructive hydrocephalus, which improved to large bifrontal EDH, was also reported and this was explained with the same physiopathology (3). We agree with the argument that after the acute decompression of posterior fossa tumors in association with hydrocephalus, the restoration of CSF dynamics may cause an instant gradient, strip the dura away from the bone, and induce EDH. This case reinforces the importance of a close follow-up and the early imaging of posterior fossa tumors, particularly with hydrocephalus, for not overlooking this rare, but serious, complication, even if a patient is clinically silent, as in our reported case.

Informed Consent: Informed consent was obtained from patient who participated in this study.

Peer-review: Externally peer-reviewed.

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