Case report

CHRONIC SUBDURAL HEMATOMA IN THE POSTERIOR FOSSA: A CASE REPORT AND REVIEW OF THE LITERATURE

Abstract

Chronic subdural hematoma (CSH) in the posterior fossa is extremely rare in the adult population. CT scanning is generally accurate and sufficiently sensitive in the diagnosis of supratentorial subdural hematomas, while MRI has clearly shown its superiority in the detection of subdural collections at unusual locations and particularly in the detailed analysis of the posterior cranial fossa. The surgical strategy is still controversial. We report a case of CSH in the posterior fossa successfully treated with a sub occipital craniectomy. A 70-year-old man; has developed headache, nausea, cerebellar syndrome and ataxia of walking. Radiological examinations revealed appearance of a right CSH in the posterior fossa associated with hydrocephalus. Upon rapid deterioration of the patient's consciousness, an urgent treatment was required. A small right suboccipital craniectomy was to access the hematoma. Postoperative computed tomography showed that the CSH and hydrocephalus had been successfully treated.

Key Words: intracranial hematoma; posterior fossa; subdural hematoma

Introduction

Chronic subdural hematoma (CSH) in the posterior fossa is extremely rare in adult population **[1]**. Different from supratentorial CSH, the optimal treatment has not been elucidated yet. CSH in the posterior fossa, associated with hydrocephalus, need an urgent treatment. However, the optimal surgical treatment is still controversial due to its scarcity. We report a case of a right CSH in the posterior fossa associated with hydrocephalus, which was successfully treated with a small right suboccipital craniectomy under general anesthesia.

Case Report

a 70-year-old man was admitted to other formation for treatment-resistant headaches, the clinical examination revealed a right kinetic cerebellar syndrome, the hemostasis assessment was normal , the CT-scan showed a small chronic subdural hematoma of the posterior fossa, the patient was treated by conservative treatment, 2 weeks later the patient was referred to our service for worsening headache, nausea, consciousness disorder (Glasgow Coma Scale: 14) and ataxia of walking, CT-scan and RMI showed an increase in the hematoma with active hydrocephalus (**Fig.1 and 2)** , MRI angiography was normal, As his consciousness deteriorated rapidly, the patient was taken to the operating room. A

UNDER PEER REVIEW

suboccipital right craniectomy was performed and a typical chronic subdural hematoma was drained after opening the dura-mater. On opening the dura, the old liquefied blood gushed out, suggesting hypertension in the posterior fossa, no drain has been put in place since the re-expansion of the parenchyma is asserted. In the postoperative period, the patient improved quickly and was discharged without neurological deficits. The postoperative CT scan was unremarkable.

Discussion

HSC is one of the most common diseases in neurosurgical practice, and the incidence is reported as 1 to 2 cases per 100,000 population per year **[1,2]**. Supratentorial CSH usually appears a few months after a mild head injury. In contrast, CSH in the posterior fossa is extremely rare in the adult population. Only 16 cases have been reported to date **(Table 1)**. Of these, 3 patients (18%) had a history of head trauma, and 11 patients (71%) had bleeding disorders or anticoagulant / antiplatelet therapy.

Usually, subdural infratentorial hematomas result from traumatic lesions of the posterior fossa and lesion of the bridging vein, other authors attribute these lesions to the rupture of an aneurysm or to an arteriovenous malformation of the posterior fossa **[1]**, or even to an intracranial hypotension syndrome **[3]**. It is well known that anticoagulant therapy or coagulation abnormalities are the main risk factor for subdural bleeding **[4]**. In our case, the bleeding should have been caused by an injury to the bridging veins in the posterior fossa, secondary to mild head trauma not noticed by the patient.

CT scanning is generally accurate and sufficiently sensitive in the diagnosis of supratentorial subdural hematomas, while MRI has clearly shown its superiority in the detection of subdural collections at unusual locations and particularly in the detailed analysis of the posterior cranial fossa. Classically, MRI can evaluate the age of the bleeding through the signal on both T_1 and T_2 sequences: isoT$_1$/hypoT$_2$ in the acute stage, hyperT$_1$/hypoT$_2$, then hyperT$_2$ in the subacute stage, and hypoT$_1$/hyperT$_2$ for the late stage.

In general, bur hole surgery or twist drill craniostomy on the convexity of the skull under local anesthesia and mild sedation is often performed for symptomatic supra-Tentorial CSH, and is widely used in neurosurgical practice **[5,6].** On the other hand, several options therapies should be considered for posterior fossa CSH. Some surgical strategies have been reported for HSC in the posterior fossa. Of the 13 symptomatic cases, 11 underwent surgical procedures, including lateral suboccipital craniotomy, small craniectomy, and burr hole trepanations under general anesthesia or local anesthesia. Surgery performed under local anesthesia carries a lower risk of complications in critically ill or elderly patients, in contrast, general anesthesia is required to perform safe surgery on unilateral and bilateral posterior fossa HSCs **[7]**.

Hydrocephalus caused by HSC of the posterior fossa has been described in 7 cases, including ours. Ventricular drainage was established in 2 of them. In the rest of the cases, the evacuation of the hematoma led to the disappearance of the non-communicating hydrocephalus. As associated hydrocephalus can rapidly deteriorate neurologic status, prompt surgery should be considered.

conclusion

Subdural hematoma of the posterior cranial fossa can be a potentially fatal injury. However, if the lesion diagnosed early and treated properly, the prognosis is not always bad **[8,9]**.

UNDER PEER REVIEW

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UNDER PEER REVIEW

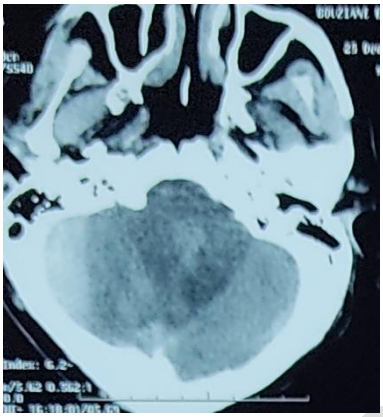
Table 1: Literature review of chronic subdural hematoma in the posterior fossa

No.	Author	Year	Age	Sex	Side	Symptoms	Preceding trauma	Coagulation disorder	Hydrocephalus	Treatment	Outcome
1	Kanter	1984	59	F	L	Coma	No	Yes	Yes	Surgical evacuation	MD
2	Izumihara	1993	70	M	L	Gait disturbance	No	No	No	Conservative	GR
3	Izumihara	1993	72	F	Bil	No	Yes	Yes	No	Conservative	GR
4	Ashkenazi	1994	65	F	L	Nystagmus	UK	Yes	No	Craniotomie	GR
5	Lagares	1998	65	F	BIL	No	No	Yes	Yes EVD	Conservative	GR
6	Kachkov	1999	41	F	R	Ataxia	UK	No	No	Surgical evacuation	GR
7	Stendel	2002	70	F	BLT	Vertigo	No	Yes	No	Trépanations	GR
8	Pollo	2003	52	F	BLT	Coma	No	Yes	Yes EVD	Trépanations	GR
9	Costa	2004	64	F	R	Vertigo	No	No	Yes	Craniectomy	GR
10	Berhouma	2007	38	F	R	Vertigo	No	Yes	No	Craniectomy	GR
11	Kurisu	2012	86	F	BLT	Tetraparesis	Yes	No	No	Trepanations	GR
12	Takami	2013	83	F	BLT	Headache	No	Yes	Yes	Conservative	GR
13	Takemoto	2016	69	F	BLT	Ataxia	No	Yes	No	Craniectomy	MD
14	Ryuzaburo	2017	86	F	BLT	Headache	No	Yes		Cranientomy	GR
15	Takuro	2018	74	M	BLT	Somnolence	Yes	Yes	Yes	Trepanation	GR
16	Our case	2020	67	M	R	Ataxia, vertigo	No	No	Yes	craniectomy	GR

L=left; R= right; Bil.= bilateral; GR = good recovery; MR= moderate recovery; EVD= external ventricular drainage; UK: unknown.

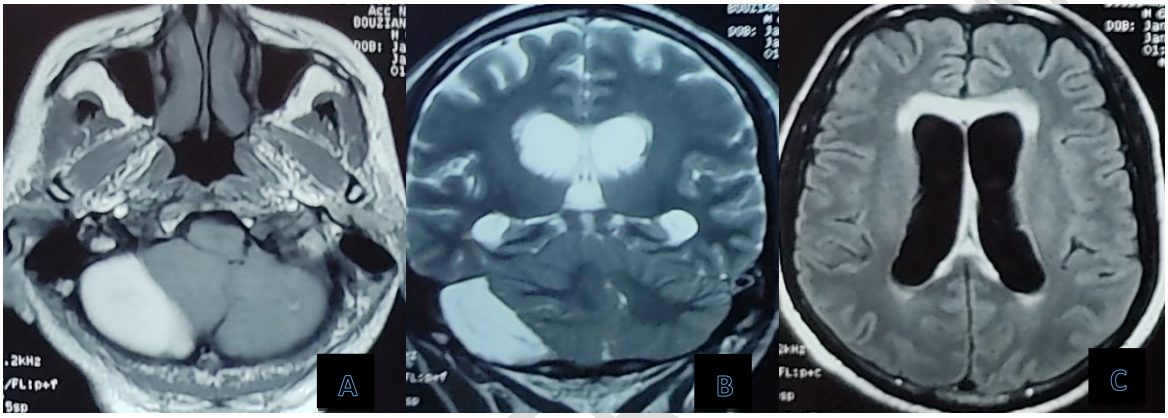
UNDER

Fig.1: Ct-scan showing chronic subdural hematoma of the right posterior cerebral fossa



UNDER PEER REVIEW

Fig .2 = Preoperative head IMR: (A) Axial T1 weighted MRI; (B) axial T2 weighted MRI, showing the chronic subdural hematoma of the right cerebral fossa. (C) Flair weighted MRI showing an active hydrocephalus



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