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Spontaneous Bilateral Chronic Subdural Haematoma of the Posterior Fossa. Case Report and Review of the Literature

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Summary

Introduction

Chronic subdural haematomas of the posterior fossa in adults without a history of trauma are very rare. To our knowledge, only 15 cases have so far been reported in the literature, including those with anticoagulation therapy. A case of spontaneous bilateral infratentorial chronic subdural haematoma associated with anticoagulation therapy in an alive adult is presented and the relevant literature is reviewed.

Case Report

A 70 year old female presented with progressive dizziness, vertigo and gait ataxia. She was on anticoagulation therapy for heart disease. Neuro-imaging revealed bilateral infratentorial subdural masses.

The subdural masses were suspects for chronic subdural haematomas by neuroradiological criteria. Because of the progressive symptomatology, the haematomas were emptied through burrhole trepanations. Chocolate-colored fluid, not containing clotted components, gushed out under great pressure. The source of bleeding could not be identified. The patient recovered well from surgery, but died 4 months later shortly after admission to another hospital from heart failure.

Discussion

The chronic subdural haematomas in this patient may have been due to rupture of bridging veins caused by a very mild trauma not noticed by the patient and possibly aggravated by the anticoagulation therapy. Infratentorial chronic subdural haematoma should at least be a part of the differential diagnosis in elderly patients with cerebellar and vestibular symptomatology even without a history of trauma.

Keywords: Infratentorial haematoma; subdural bleeding; posterior fossa.

Introduction

Chronic subdural haematomas of the posterior fossa in adults without a history of trauma are very rare. To our knowledge, only 15 cases have so far been reported in the literature, including those with anticoagulation therapy (Table 1). The case of a woman with spontaneous, bilateral chronic subdural haematomas of the posterior fossa associated with anticoagulation therapy is presented and the relevant literature concerning this subject is reviewed.

Case Report

This 70-year-old female patient was suffering from progressive dizziness, which first occurred about two months ago when she was completely well. The patient was on anticoagulation therapy for a long time because of heart disease. She was admitted to the medical ward of another hospital after having been unable to walk for a couple of days because of pronounced vertigo and gait ataxia. A cardiovascular disease was suspected but medical examinations including echocardiography and long-term electrocardiography yielded no abnormal findings. Computed tomography (CT) and magnetic resonance imaging (MRI) demonstrated bilateral infratentorial subdural haematomas. Coagulation was normalised and the patient was transferred to our department.

On admission, the obese patient was in a good general condition. She could not remember any previous head injury. She was awake, alert, and complained of severe dizziness when moving the head or rising. The neurological examination revealed a gaze nystagmus to the right. No other cranial nerve deficits were noted. The patient was unable to walk because of vertigo and gait ataxia.

Blood tests showed that coagulation was within the normal range. The CT and MRI studies demonstrated subdural space-occupying masses at the convexity of the cerebellar hemispheres with compression of the cerebellum and the 4th ventricle (Figs. 1–3). The masses were hypodense on the CT scans and hyperintense on the T1- and T2-weighted MR images, indicating chronic subdural haematomas.

Because of the patient's progressive and severe symptoms, the haematomas were emptied through bilateral burrhole trepanations on the day of admission. Chocolate-coloured fluid, not containing clotted components, gushed out under great pressure. The source of bleeding could not be identified. The subdural space was thoroughly rinsed with saline solution. A subdural Jackson-Pratt drain was placed on the right because of little intra-operative expansion of the cerebellum.

Table 1. *Synopsis of 16 Cases of Chronic Subdural Haematoma of the Posterior Fossa in Adults Without a History of Trauma Reported in the Literature*

Author	Age	Sex	Anticoagulation therapy	Duration of symptoms	Headache, vomiting	Cerebellar signs
Neisser and Pollack 1904 [15]	?	m	no	4 weeks	yes	yes
Neisser and Pollack 1904 [15]	44	?	no	10 days	yes	yes
Schönbauer 1937 [18]	38	f	no	4 weeks	yes	no
Achslogh 1952 [1]	51	m	no	1 year	yes	yes
Holub 1953 [9]	51	m	no	9 days	yes	yes
Gross 1955 [7]	51	f	no	7 weeks	yes	yes
Giroux and Leger 1962 [6]	60	m	no	?	no	yes
Zenteno-Alanis *et al.* 1968 [20]	49	m	yes	2 months	yes	yes
Capistrant *et al.* 1971 [4]	50	m	yes	1 day	yes	no
Murthy 1980 [14]	32	m	no	8 months	yes	yes
Kanter *et al.* 1984 [12]	59	f	yes	acute	yes	yes
Izumihara *et al.* 1993 [10]	70	m	no	2 months	no	yes
Ashkenazi *et al.* 1994	65	f	yes	18 months	no	yes
Lagares *et al.* 1998 [13]	65	f	yes	acute	no	no
Kachkov 1999 [11]	41	f	no	?	yes	yes
Stendel *et al.* 2001	70	f	yes	8 weeks	no	yes

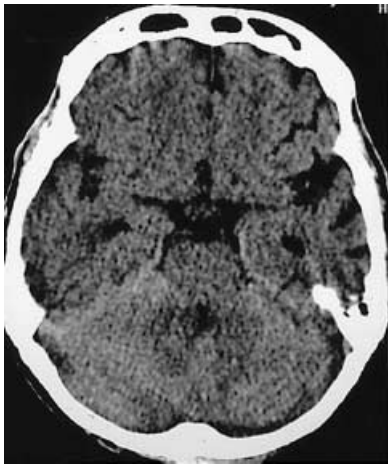

Fig. 1. Preoperative cranial CT scans showing bilateral infratentorial subdural haematomas, more pronounced on the right, with marked compression of the 4th ventricle

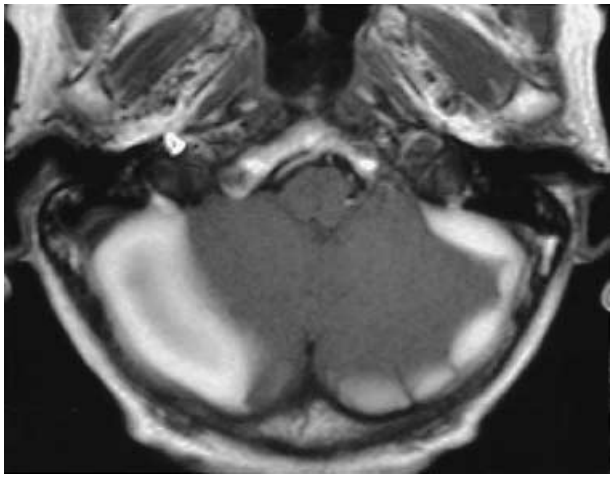

Fig. 2. T1-weighted MRI following contrast medium administration depicts the subdural haematomas which are much more pronounced on the right side with compression of the cerebellar hemisphere and of the 4th ventricle

A clear improvement of the patient's clinical condition was seen immediately after the intervention. Dizziness and ataxia resolved completely within a few days. Postoperative CT showed a normal postoperative appearance. The mass effects in the posterior fossa had nearly completely disappeared and the 4th ventricle had re-expanded (Fig. 4).

About 30 ml of old blood were discharged from the right subdural drain within the first 24 hours, followed by only a few millilitres of blood on the 3rd postoperative day. The drain was removed on the 3rd postoperative day. The postoperative course was uneventful and the patient was discharged after 10 days.

Four months later, the patient suddenly developed acute gastrointestinal bleeding and hemiparesis without any preceeding symptoms. She was admitted to another hospital and died 3 weeks later from heart failure.

Discussion

The incidence of intracranial chronic subdural haematoma is 1–2 cases per 100,000 inhabitants per year, and they predominantly occur in elderly individuals [3]. However, subdural haematomas rarely occur in the posterior fossa. In a study by Ciembroniewicz, only 3 of 535 intracranial subdural haematomas were located in the posterior fossa [5]. In children and above all in new-borns, on the other hand, infratentorial subdural haematomas appear to be more frequent [16]. They are primarily attributed to birth injury with rup-

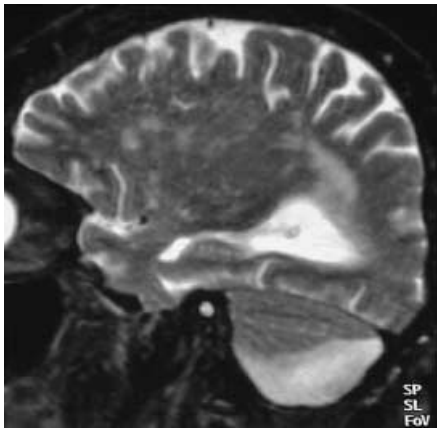

Fig. 3. T2-weighted MR image in sagittal view showing the hyperintense subdural haematoma on the right side and its mass effect

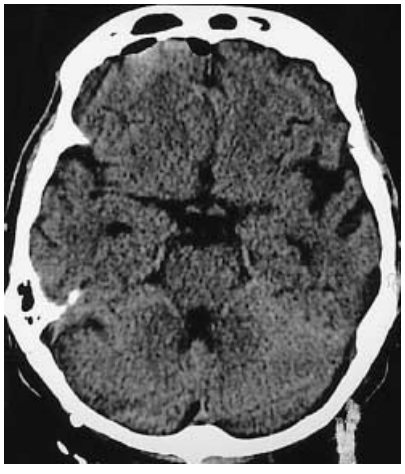

Fig. 4. Postoperative cranial CT scan demonstrating the fully re-expanded 4th ventricle. Only slight residual margins persist subdurally

ture of the tentorium or of the venous sinus, but also to moulding of the skull [8].

Chronic subdural haematomas probably represent one of the rarest forms of posterior fossa bleeding. Only 15 cases of spontaneous chronic subdural haematomas of the posterior fossa in adults have so far been reported in the literature, including those associated with anticoagulation therapy (Table 1).

Chronic subdural haematomas of the posterior fossa often present with nonspecific symptoms making diagnosis difficult. In nearly all cases published before the advent of computed tomography [CT], the diagnosis was established only during surgery or at autopsy [1].

Infratentorial subdural haematomas can result from direct traumatic damage to the posterior fossa with injury of the venous sinus or of bridging veins [2]. About 50% of the patients developing subdural haematomas report a traumatic event, though a very mild one in most cases [3]. Another cause is bleeding associated with cerebellar contusion [2]. The rather low incidence of chronic subdural haematomas in the posterior fossa may be explained by the rare occurrence of venous sinus injuries and the low number of bridging veins present in the posterior fossa [17]. One may also speculate that many chronic subdural haematomas of the posterior fossa remain undetected as a result of the poor visualisation of the posterior fossa by CT and that smaller ones resolve spontaneously. Furthermore, a chronic subdural haematoma can be the result of a transformation of an acute one. The latter are likewise very rare in the posterior fossa and often lead to death.

Achslogh attributes chronic subdural haematomas without reliable evidence of a traumatic event to rupture of an aneurysm or an arteriovenous malformation in the posterior fossa [1]. Anticoagulation treatment is a known risk factor for the development of subdural haematomas, especially in patients with head injury [3]. It has been reported that subdural haematomas constitute the most frequent complication of anticoagulation therapy with an incidence of 12–38% [19]. However, to our knowledge only 5 cases of chronic infratentorial subdural haematoma associated with anticoagulation therapy have been described so far in the literature [3, 4, 12, 13, 20].

Acute subdural haematomas of the posterior fossa typically become manifest by the sudden onset of symptoms which progress rapidly and include a reduced vigilance with respiratory insufficiency and cardiovascular disorders [5]. The predominant manifestations of the chronic type are headaches, vomiting, cerebellar symptoms, and cranial nerve dysfunction. The few cases of adult chronic infratentorial subdural haematomas reported in the literature include only three more patients in whom vertigo and nystagmus were the main clinical symptoms as in our patient [3, 6, 10]. Vertigo and nystagmus are rather common symptoms indicative of a vestibular disorder. Such symptoms may be caused by a central disorder of the vestibular connections of the CNS (vestibular nuclei and tract, cerebellum, descending tracts of cerebellum) [3]. The bleeding in the present case may have been due to rupture of bridging veins caused by very mild trauma not noticed by the patient and possibly aggravated by the anticoagulation therapy. However, development from an acute subdural haematoma appears to be

highly unlikely because the patient could not recall any traumatic event.

In conclusion, in patients presenting with cerebellar and vestibular symptoms, one should at least think of the possibility of an infratentorial subdural haematoma. The basic therapeutic approach in the chronic variety does not differ from the management of supratentorial chronic subdural haematomas.

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Comments

This paper is well written and emphasizes an important point for diagnosing these rarely occurring lesions – the quality of imaging or better lack of quality. MRI is superior to CT scanning in this region. Some of these lesions my easily be overlooked in posttraumatic situations by CT scanning with standard projections, however these haematomas may also disappear gradually and thus spontaneously.

J. Haase

The authors describe a very rare entity of a spontaneous infratentorial subdural haematoma in a 70 years old female without any recorded preceding injury or blood clotting abnormality. There is a very comprehensive review of an existing limited literature on the subject. This paper indicates, that cerebellar and vestibular symptoms could in some very rare cases result from an subdural haematoma and that surgical evacuation offers a rapid improvement.

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