Arq Neuropsiquiatr 2004;62(1):170-172

CHRONIC SUBDURAL HEMATOMA OF THE POSTERIOR FOSSA ASSOCIATED WITH CEREBELLAR HEMORRHAGE

Report of a rare disease with MRI findings

Leodante B. Costa Jr[1], Agustinho de Andrade[2], Gustavo Fonseca Valadão[3]

ABSTRACT - Chronic subdural hematoma of the posterior fossa is an uncommon entity, and spontaneous lesions are very rarely described, occurring mostly during anticoagulation therapy. The association of the posterior fossa chronic subdural hematoma with spontaneous parenchymal hemorrhage without anticoagulation therapy was never related in the literature, to our knowledge. We describe a case of a 64 year-old woman who suffered a spontaneous cerebellar hemorrhage, treated conservatively, and presented 1 month later with a chronic subdural posterior fossa hematoma.

KEY WORDS: intracranial hematoma, subdural hematoma, posterior fossa.

Hematoma subdural crônico de fossa posterior associado a hemorragia cerebelar espontânea: relato de doença rara com achados de RNM

RESUMO - Hematomas subdurais da fossa posterior são lesões raras, mais comumente relacionadas com traumas graves. A ocorrência de hematomas subdurais crônicos na fossa posterior é muito rara, sendo descritos 15 casos até o momento, boa parte relacionada ao uso de anticoagulantes. Em nossa revisão da literatura, não pudemos encontrar nenhum relato da associação entre hematoma subdural crônico da fossa posterior e hemorragia cerebelar espontânea. Relatamos o caso de paciente de 64 anos com hematoma intraparenquimatoso cerebelar tratado conservadoramente e hematoma subdural crônico, tratado cirurgicamente, cerca de 1 mês após o acidente vascular cerebelar.

PALAVRAS-CHAVE: fossa posterior, hematoma subdural, hematoma intracraniano.

Chronic subdural hematoma of the posterior fossa is an uncommon entity, and spontaneous lesions are very rarely described, occurring mostly during anticoagulation therapy. The association of the posterior fossa chronic subdural hematoma with spontaneous parenchymal hemorrhage without anticoagulation therapy was never related in the literature, to our knowledge. We describe a case in a woman.

CASE

A 64-year-old hypertensive woman presented to another emergency service 15 days before admission to our hospital with a history of sudden headache and gait disturbance. Her hypertension was well controlled with regularly taken antihypertensive medications. She was submitted to a CT scan of the head and treated conservatively with diagnosis of spontaneous cerebellar hemorrhage, and discharged five days after without intercurrences. Fifteen days later, she presented to our outpatient clinic with complaints of continuous headache, somnolence and urinary incontinence. Another CT scan was performed and showed hydrocephalus, and a ventriculoperitoneal shunt was inserted (Fig 1). On the first postoperative day, the patient presented with somnolence, slurred speech, incoordination and ataxia. A MRI (Figs 2 and 3) showed a right posterior fossa extra-axial hematoma, hyperintense both on T1 and T2 sequences, compressing the right cerebellar hemisphere, and a small, contiguous, intraparenchymal right cerebellar hematoma in subacute fase, with some edema; MRI angiography was normal. The patient was taken to the operating room. A suboccipital right craniectomy was performed and a typical chronic subdural hematoma was drained after opening the dura-mater. On opening the dura,

[1]Neurosurgeon, Benjamin Guimarães Foundation (BGF) and Hospital Evangélico (HE), Belo Horizonte MG, Brazil; [2]Neurosurgeon, HE; [3]Resident of Neurosurgery, BGF and HE.

Received 4 July 2003, received in final form 27 August 2003. Accepted 1 October 2003.

Dr. Leodante B. Costa Jr - Rua Três Corações 13/302 - 30480-110 Belo Horizonte MG - Brasil. E-mail:leodante@terra.com.br

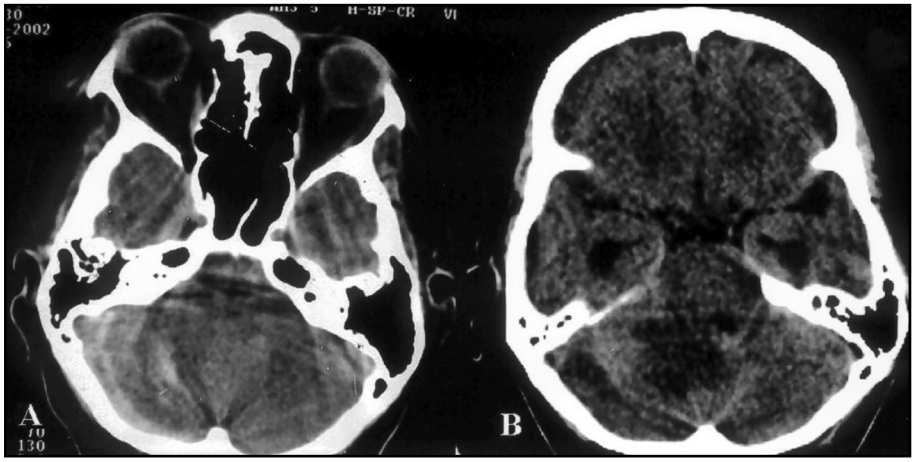

Fig 1. Axial cut of the first (A) CT, showing a hyperdense area in the right cerebellar hemisphere, and the second (B), fifteen days later, showing the dilated temporal horns and a hypodense area in the same cerebellar hemisphere.

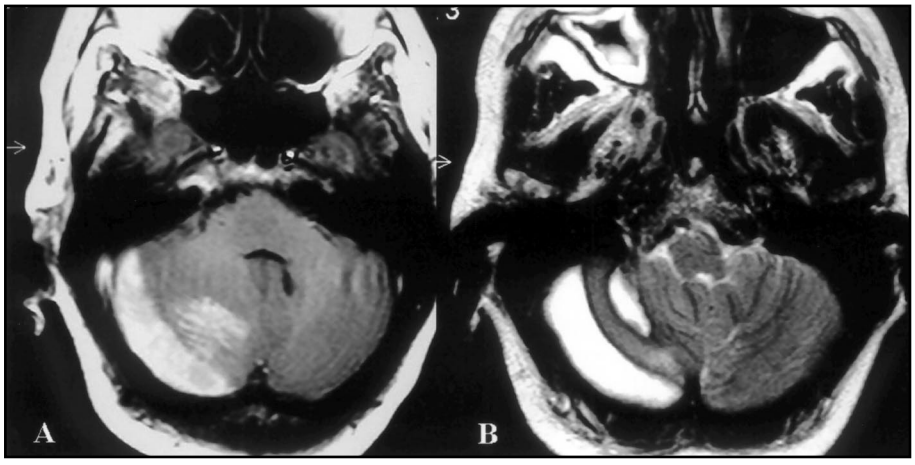

Fig 2. Axial MRI, T1 weighted (A) and T2 weighted (B) showing the extra-axial collection associated with an intraparenchymal hemorrhage in the right cerebellar hemisphere.

the old, liquefied blood gushed out, suggesting hypertension in the posterior fossa. In the postoperative period, the patient improved quickly and was discharged without neurological deficits. The postoperative CT scan was unremarkable.

DISCUSSION

Chronic subdural hematomas are common neurosurgical lesions. The incidence of intracranial chronic subdural hematoma is 1-2 cases / 100000 inhabitants per year, predominating in older people. Subdural hematomas of the posterior fossa are very rare in adults[1]. The lesions described in the literature are usually acute, related to severe traumatic injuries, with high mortality rates. In children and mostly in newborns, these lesions appear to be slightly more frequent[1]. In a review of 2300 cases from Sambasivan[2], none in the posterior fossa

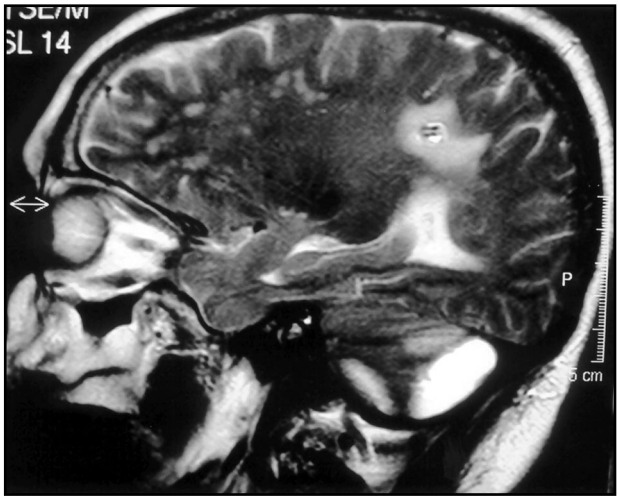

Fig 3. Sagital MRI, T2 weighted, showing the subdural hematoma compressing the cerebellar hemisphere. Some blood in the cerebellar parenchyma and the signal of the ventriculo-peritoneal shunt in the parietal area can also be seen.

was reported, and Tsai et al.[3] reported two cases in their review of 1700 CT scans of traumatic head injuries.

Chronic subdural hematomas of the posterior fossa are among the rarest posttraumatic intracranial lesions. About half the cases reported are related to traumatic events, mostly minor traumatic injuries. The acute, traumatic lesions of the posterior fossa can result from venous sinus tears, depressed skull fractures or cerebellar contusions, or may also be due to ruptured intracranial aneurysms or arteriovenous malformations. The other half has a variety of causes (minor trauma not recalled by the patient, anticoagulation therapy, blood clotting disorders and intracranial hypotension) or no cause that could be found at all. The finding of these lesions in patients without a history of trauma is even rarer, with only 15 cases reported, including those related to anticoagulant therapy[1,3-7].

There seems to be no difference in the mechanism of occurrence of supra and infratentorial chronic subdural hematoma, with the supposed starting point being the mingling of cerebrospinal fluid with blood in a small subdural hematoma. The reasons that could account for the rarity of posterior fossa chronic subdural hematoma are probably the difficulty in diagnosis before the widespread availability of MRI, because CT scans are not the best tool to see lesions in the posterior fossa, the more uncommon occurrence of venous sinus lesions in the posterior fossa, and the small number of bridging veins in the posterior fossa in comparison with the supratentorial subdural space. Also, since the occurrence of a chronic subdural hematomas requires first an acute hematoma, the severity of the lesions associated with acute subdural hematomas of the posterior fossa may lead most patients to death, before the chronic hematoma could be diagnosed or even formed[6,8].

Concerning the association of the spontaneous posterior fossa chronic subdural hematoma and intracerebellar hemorrhage, we were not able to find any report on this issue in the literature, reviewed at Medline since 1971.

Clinical presentation of these lesions varies widely depending on the acute or chronic stage of the bleeding. Acute lesions are usually related to trauma, occur usually in severely ill patients, with coma, headache, vomiting, ocular motor nerves palsies, other cranial nerves palsies and respiratory arrest. In patients on anticoagulation therapy, intracranial bleeding should always be suspected in the presence of neurological symptoms. The symptoms of brain stem compression or cerebellar signs could suggest the presence of a posterior fossa lesion, a rare lesion even with the use of anticoagulation. The diagnosis of chronic lesions in the posterior fossa is very difficult. Chronic subdural hematomas of the posterior fossa often present with nonspecific symptoms. In the few cases described, the presenting symptoms were vomiting, headache, cerebellar symptoms, cranial nerve dysfunction, vertigo and nystagmus, not always associated[1,4,5].

The rarity of these lesions precludes treatment protocols, but probably the treatment should not differ from that of chronic supratentorial hematomas, with correction of the coagulation profile if necessary and surgical drainage.

To our knowledge, this is the first report of a spontaneous chronic posterior fossa subdural hematoma related to an intraparenchymal cerebellar hemorrhage, without history of trauma, posterior fossa vascular pathology or anticoagulation.

REFERENCES

1. Stendel R, Schulte T, Pietilã TA, Suess O, Brock M. Spontaneous bilateral chronic subdural hematoma of the posterior fossa. Case report and review of literature. Acta Neurochir:2000;144:497-500.
2. Sambasivan M. An overview of chronic subdural hematoma: experience with 2300 cases. Surg. Neurol 1997;47: 418-422.
3. Tsai FY, Teal JS, Itabashi HH, Huprich JE, Hieshima GB, Segall HD. Computed tomography of posterior fossa. J Comp Assist Tomogr 1980;4:291-305.
4. Murthy VS, Deshpande DH, Narayana-Reddy GN. Chronic subdural hematoma in the cerebellopontine angle. Surg Neurol 1980;14:227-229.
5. Isla A, Alvarez F, Manrique M, Castro A, Amaya C, Blázquez MG. Posterior fossa subdural hematoma. J Neurosurg. Sci 1987;31:67-69.
6. Izumihara A, Orita T, Kajiwara K, Tsurutani T. Simultaneous supra- and infratentorial chronic subdural hematoma. Eur J Radiol 1993;16:183-185.
7. Kanter R, Kanter M, Kirsch W, Rosenberg G. Spontaneous posterior fossa subdural hematoma as a complication of anticoagulation. Neurosurgery 1984;15:241-242.
8. Cuny E. Physiopathologie de l'hématome sous-dural chronique. Neurochirurgie 2001;47:464-468.