Intracranial meningioma causing acute spontaneous subdural hematoma

Meningioma intracraneal causante de hematoma subdural agudo espontáneo

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Abstract

The spontaneous intracranial hemorrhage associated with cerebral tumors constitutes a rare event. The isolated spontaneous subdural hematoma related to a cerebral tumor represents an even more striking condition. Some hypotheses have been formulated to attempt to explain the occurrence of the spontaneous hemorrhages associated with intracranial meningiomas, but there is no consensus on its formation. We report on a case of a male patient presenting intense headache, without traumatic brain injury history, in which investigation showed an intracranial meningioma associated to a spontaneous subdural hematoma. He was submitted to a cranial surgery, presenting good recovery. We also perform a brief review on the theme.

Key Words: meningioma; brain tumor; acute subdural hemorrhage.

Resumen

La hemorragia intracraneal espontánea asociado con tumores cerebrales constituye un evento raro. El hematoma subdural espontáneo aislado relacionada con un tumor cerebral representa una condición aún más sorprendente. Algunas hipótesis han sido formuladas para intentar explicar la aparición de las hemorragias espontáneas asociadas con meningiomas intracraneales, pero no hay consenso sobre su formación. Se presenta un caso de un paciente de sexo masculino que presentó dolor de cabeza intenso, sin historia de lesión cerebral traumática, en el que la investigación mostró un meningioma intracraneal asociado a un hematoma subdural espontáneo. Se le sometió a una neurocirugía, presentando una buena recuperación. También realizamos una breve revisión sobre el tema.

Palabras claves: meningioma; tumor cerebral; hematoma subdural agudo.
Introduction

The spontaneous intracranial hemorrhage associated with cerebral tumors constitutes a rare event, being more related to malignant lesions, especially metastases [1,2,4]. The benign tumors rarely present with hemorrhage [2]. The isolated spontaneous subdural hematoma associated with meningioma is very rare [1-3] and most reported intracranial hemorrhages associated with meningiomas are found in the subarachnoid and subdural spaces [4].

We report on the case of a patient with convexity meningioma which presented spontaneous subdural hemorrhage adjacent to the tumor and review the pertinent literature.

Case Report

The patient, male, 52 years old, was admitted to the hospital for an intense headache which had begun suddenly 4 days prior to his hospitalization. In the beginning of this medical condition, he presented with a yet discrete left hemiparesis associated with dysphasia, which had a spontaneous resolution within a few hours. At admission, he was alert, without focal neurological deficits, with moderate headache in the right frontotemporal region. There was no history of cranioencephalic traumatism, alcoholism or coagulopathies.

In the complementary investigation, hematological exams and coagulation tests were normal. The cranial computed tomography (CT) showed a justa-dural hypoattenuating lesion with intermingled hyperattenuation (Figure 1A). In addition, a cranial magnetic resonance imaging (MRI) was solicited (Figure 1 B-C), which showed in the axial gadolinium-enhanced T1-weighted sequence the presence of a hypersignal in the justa-cortical region associated with a heterogeneous signal at the periphery of the lesion. The patient was then submitted to a right frontotemporoparietal craniotomy for drainage of the hematoma and resection of the cerebral tumor. The anatomopathological study showed it was a meningothelial meningioma. The postoperative cranial CT showed no evidence of bleeding nor residual tumor (Figure 1D). The patient presented with a good outcome, receiving discharge after 7 days, devoid of neurological deficits.

Discussion

The spontaneous intracranial hemorrhage associated with meningioma is an uncommon event [1,2,4]. When it occurs, its most frequent site is in the subarachnoid space [1-3], followed by the intracerebral and intratumoral topography [1]. The subdural hemorrhage constitutes an even rarer event [1,3,4] and usually coexists with hemorrhage in other locations [1]. There have been only isolated reports of association of meningioma with an acute subdural hemorrhage.

Due to the rarity of these events, the clinicopathological features of tumor blee-
ding propensity are poorly defined [5]. Some hypotheses have been formulated to attempt to explain the occurrence of the spontaneous hemorrhages associated with intracranial meningiomas [1,2,6], among them being: the distension of the vessels due to tumor growth would entail their rupture and consequent subdural hemorrhage [1,2,6]; endothelial proliferation with vascular occlusion and necrosis could provoke the rupture of tumor vessels and cause consequent hemorrhaging [1]; the formation of hypervascularized and fragile granulation tissue surrounding the tumor necrosis sites could generate the hemorrhaging [1,2]; the subdural hemorrhage could occur following the rupture of vessels due to direct vascular invasion by tumor cells [1,2,6]; local venous hypertension secondary to the presence of the tumor would determine bleeding in the subdural space [1,2,6]. These hypotheses were elaborated by means of histopathological analysis of the samples obtained in the few reported cases and there is possibly an association among these theories in the formation of the spontaneous subdural hemorrhage induced by meningioma [1,2]. Other factors, such as the histological subtype, tumor site, age and gender of the patient seem to have no correlation with the hemorrhagic event [5,6], however some authors attribute greater risk of hemorrhage to the angiomatous and malignant meningiomas [1]. Nonetheless, the majority of the cases of hematomas associated with meningiomas occur in the benign subtypes [1]. In the histopathological analysis of the present case, no areas of necrosis or thrombosis were observed and, following the immunohistochemical analysis, the diagnosis of meningothelial meningioma was confirmed.

Conclusion

Although the subdural hematoma associated with meningioma constitutes a rare event, awareness of this association is important. It should be researched in cases of spontaneous subdural hematomas with atypical appearances for the correct therapeutic planning.

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References


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