CASE REPORTS

Acute hydrocephalus secondary to meningioma with psychiatric symptoms as initial manifestation

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ABSTRACT

Background: Psychiatric disorders are often difficult to evaluate and sometimes have negative connotations associated. That could be a reason to ignore the correct diagnosis of underlying neurological diseases.
Case report: We present a case report of a patient with psychiatric symptomatology, where during the study in the Emergency Department an acute hydrocephalus secondary to a massive meningioma was evidenced.
Conclusions: This case exemplifies how psychiatric symptoms, often devalued by the physician, may be the first manifestation of serious neurological disorders, as well as being associated with a medical emergency, as in this case was the acute hydrocephalus.

Key Words: Meningioma, Hydrocephalus, Psychiatric disorders, Emergency

1. INTRODUCTION

Psychiatric disorders are often devalued, but may be related to underlying neurological diseases.[1] Meningiomas represent 15% to 20% of intracranial tumors among adults and are more frequent in women, with the highest incidence between the 5th and 7th decade. Most of the tumors are benign and well delimited, however, there are forms of atypical progression, where there may be parenchymal infiltration, with a worse prognosis.[1–3] The authors present a case report of a meningioma whose initial manifestation was acute hydrocephalus and psychiatric symptomatology.

2. CASE REPORT

A 50-year-old woman, who after a difficult social situation during the last 2 months (left work, stopped paying bills, stopped buying food ...) becomes homeless, is brought by social workers to the hospital.

She was admitted to the Emergency Department, presenting a two months clinical condition, consisted in: anorexia with marked weight loss, serious deficits in self-care and easy crying.

Clinical past history of anemia with not affiliated etiology (denies bleeding losses) and since the onset of these clinical condition, she has been medicated with Desloratadine 5 mg at bedtime.

Initially observed by Psychiatry, where the physical exam was highlighted for the careless she presented. The colleague described the physical exam as: conscious but still sleepy, oriented in time, space and person. Her gaze was absent and she was limited to answering the questions made in a monosyllabic way. She did not present obvious psychotic symptoms to the observation. She had emotional ease and she was easily crying during the observation. She denied suicidal ideation, ignoring her own idics, and stating “to be all well with her”.

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Laboratory exams showed microcytic anemia (hemoglobin: 8.4 mg/dl and mean globular volume of 70 fl) without other alterations, namely: electrolytes, renal and hepatic function. Urine drug test and HIV serology were negative too.

In this context, an observation by the Emergency team of Internal Medicine was requested. Throughout the examination, the patient presented easy crying with no apparent reason, without evidence of other alterations, particularly, in the neurologic examination (sensory and motor responses, reflexes, cranial nerves, cerebellum function and examination of the fundus of the eye).

A CT cranial scan (without contrast) was requested, to discard cerebral organicity or vascular pathology. The exam revealed: "Large extra-axial nodular lesion in the: suprasellar region, right parasellar and basilar duct, hyperdense suggestive of meningioma, measuring about of 40 mm $\times$ 38 mm $\times$ 33 mm. There is evident mass effect, with compression of the protuberance, right cerebral peduncle, silvius aqueduct and supratentorial acute hydrocephalus" (see Figure 1).

The patient was transferred in an emergency setting for Neurosurgery, where an evaluation and therapeutic orientation for acute hydrocephalus was performed.

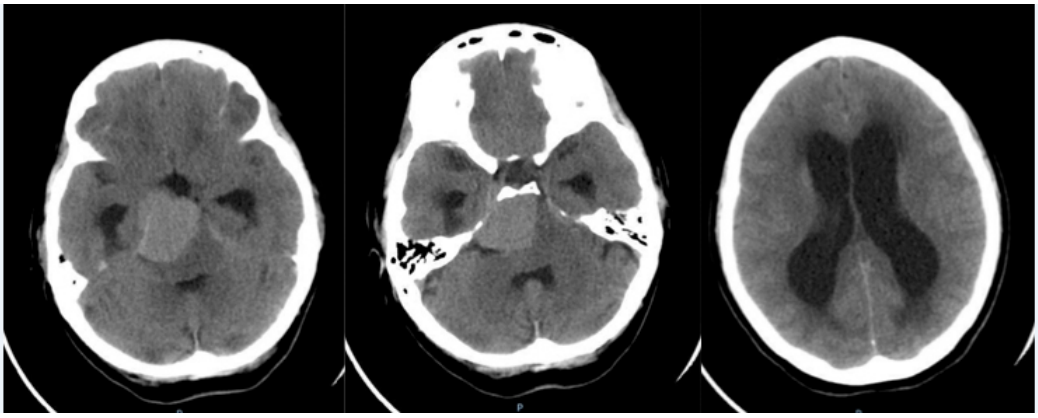

Figure 1. Computed axial tomography of the skull. Supra-sellar nodular lesion, right parasellar and basilar duct, suggestive of meningioma with mass.

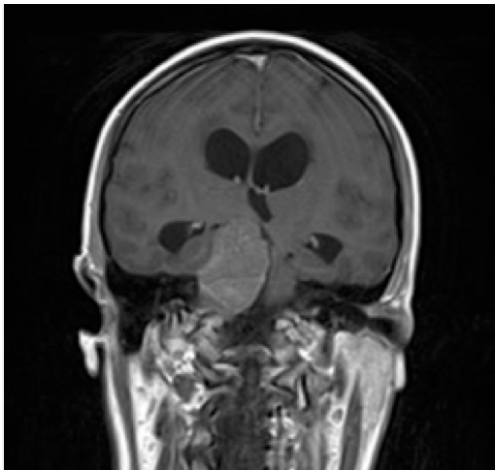

Figure 2. Brain Contrast-enhanced MRI (coronal image). Petroclival meningioma on the right side, with suprasellar extension with hydrocephalus due to obstruction in the third and the fourth cerebral ventricle with compression of the brainstem.

Further exams were performed to characterize better the tumor. The cerebral MRI concluded that: "a large volume petroleum-clival meningioma in the right side, with suprasellar extension and trigeminal cranial nerve compromise, with incipient hydrocephalus due to obstruction of the III and IV ventricles, exerting a compressive effect on the brainstem with obliteration of the cisterns of the base" (see Figure 2) and CT angiography showing "deviation of the basilar artery to the left and the right posterior communicating artery" (see Figure 3).

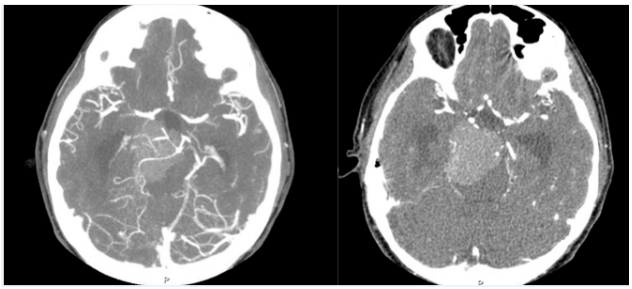

Figure 3. Angio-CT of the skull. Deviation of the basilar artery to the left and the right posterior communicating artery.

A right retrosigmoid craniotomy with excision of the entire posterior cranial fossa components were performed. In the postoperative, the patient presented a Glasgow score of 10,

left hemiparesis, paresis of the VI cranial pair of the left eye and right peripheral facial paresis.

The reassessment in the Postoperative with cranial MRI revealed: "reduction of the dimensions of the right petro-clival expansive lesion with reduction of the medial cerebellar peduncle compression and repermeabilization of the III and IV ventricles, without signs of hydrocephalus. A retro-clival tumor lesion persists, which causes a reduction in the permeability of the pre-pontic cistern and molds the protuberance and midbrain" (see Figure 4).

Progressed with recovery of most of the deficits, still maintaining after 6 months of the surgery, a paresis of the right vocal cord paresis and paralysis of low cranial pairs (IX, X and XI); with total recovery from psychiatric symptoms.

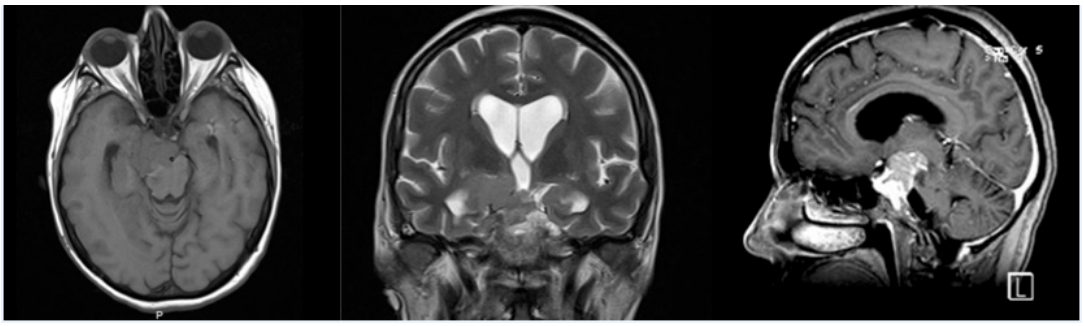

Figure 4. Postoperative MRI cranio-encephalic. Supra-tentorial tumor residue without signs of hydrocephalus.

3. DISCUSSION

Meningiomas are the most frequent primary tumors of the central nervous system (CNS) and represent 36.4% of all CNS tumors and 53.4% of CNS benign ones in some series.[4,5] Originating from the arachnoid cells, these tumors often present a slow growth,[4,6,7] being distant metastases rare.[7] In 98% of the cases, present an intracranial location,[7] specifically, are predominantly located in the cerebral hemispheres (20%-34%) and 1% are described located at the petro-clival level.[6,8]

The World Health Organization (WHO) classifies these tumors into three types: type 1 includes benign forms and represents 90% of the cases, type 2 atypical forms and type 3 anaplastic forms, with 5%-7% and 1%-3% respectively.[7,9]

In most cases these entity are clinically asymptomatic.[10] The psychiatric symptoms are more likely to be an early manifestations of these tumors, highlighting the changes in the behavioral state (apathy, attention or personality changes...) as a result of subfrontal or sphenoidal affectation.[6,10] These tumors can also be manifested by motor deficits, sensory changes, visual fields, aphasia or seizures.[7]

Usually are spontaneous or with an unknown etiology, although there are risk factors described[9] as: radiation exposure, cranial trauma or association with hereditary syndromes such as: Neurofibromatosis type 2, Li-Fraumeni, Turcot, Gardener, Von Hippel-Lindau, Cowden, Gorlin and Multiple Endocrine Neoplasia Type I.[7,8]

The diagnosis can be made accidentally, during the study of another pathology or even constitute an authentic medical emergency, such as the presentation of acute hydrocephalus by obstruction, where they classically manifest with papilledema and headache upon waking.[10]

The diagnosis is performed under visualization of the mass by CT scan or MRI,[10] being the latter, the mode of choice in the investigation for the superiority in the diagnosis and differentiation of intra or extra-axial lesions.[9] We can complement the study with Angio-CT or Angio-MRI to evaluate the invasion of vascular structures by the tumor.[11] According to WHO, MRI can help to predict the types of meningioma.[9]

Contrast administration in MRI allows to have a better definition of the tumor mass, presenting in some cases as: calcified, cystic or necrotic forms. Haemorrhage is a rare presentation of a meningioma.[9]

Sometimes it takes a multidisciplinary approach, or even referencing to more specialized centers in these case cases.[7]

The surgical resection is the base of the treatment, reserving the follow-up to cases that are asymptomatic and Radiotherapy or Radiosurgery for more specific cases.[6] Pharmacological treatment did not show efficacy and the most recent studies with antiangiogenic (Vatalanib, Sunitinib, Bevacizumab) are having an off-label use, and should only be considered in refractory cases and after a multidisciplinary case-by-case discussion.[6]

4. CONCLUSION

Often, psychiatric symptoms are the first manifestations of neurological disorders, such as: vascular pathology, tumors, neurodegenerative diseases or epilepsy. This means that we

must broaden the clinical discussion, towards differential diagnoses that are sometimes not considered.[1]

The relevance of this case, is not simply the clinical presentation, but rather manifest as a medical emergency, acute hydrocephalus. Diagnostic imaging is essential, but clinical suspicion is what will motivate your request and guidance. The reference of these patiens to more experienced centers and a multidisciplinary discussion is fundamental for the correct therapeutic orientation.

CONFLICTS OF INTEREST DISCLOSURE

The authors declare that they have no competing interests.

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