

Central Neurocytoma: A Case Report

Neurocitoma central: presentación de un caso

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Summary

Intraepithelial central neurocytoma is a rare tumor, with very low incidence and favorable prognosis. Its radiological presentation shows similarities with other brain tumors. The case of a 36-year-old patient with an incidental diagnosis of central intra-epithelial neurocytoma is described. After 13 years of diagnosis the patient refers clinical symptoms of headache and bradypsychia. The patient refused surgery. Diagnosis and follow-up is possible by means of magnetic resonance imaging with spectroscopy.

Resumen

El neurocitoma central es un tumor raro, de muy baja incidencia y de pronóstico favorable. Su presentación radiológica muestra similitudes con otros tumores cerebrales. Se describe el caso de un paciente de 36 años con diagnóstico incidental de neurocitoma central intraepitelial. Después de 13 años del diagnóstico el paciente refiere sintomatología clínica de cefalea y bradipsiquia. El paciente rechazó la cirugía. El diagnóstico y seguimiento es posible mediante imagen por resonancia magnética con espectroscopia.

Introduction

Central neurocytoma is considered a neoplasm benign intraepithelial location. The Organization World Health Organization (WHO) classifies it as a grade II. Its incidence is less than 0,5 % of all brain tumors (1), and is most prevalent in young adults, median age 34 (2). Hassoun and co-workers (3) described it by first time in 1982, as a benign tumor with characteristics distinctive histopathological and radiological of other intraventricular neoplasms. The treatment of choice is surgery, with complete resection of the tumor. Radiation therapy as an adjuvant treatment is indicated in cases where complete resection is not possible (2).

Case Presentation

36-year-old male patient with family history of high blood pressure in both parents. Symptoms include left frontal headache, which intensifies with changes in position, with irradiation to the occipitocervical region, and bradypsy. The patient had been taken to the hospital in 2006 for a head trauma in the occipital region, with loss of consciousness. He underwent a simple computerized axial tomography (CT) scan of the skull in which a large intraventricular expansive lesion was found, with greater growth towards the left frontal horn. Subsequently, biopsies were performed on the lesion endoscopically through the frontal horn, resulting in intraventricular central neurocytoma.

In this new consultation, images were taken magnetic resonance imaging (MRI) with contrast with gadolinium plus spectroscopy.

In the MRI study of March 22, 2019, intraventricular expansive lesion of great size, with greater growth towards the frontal horn left, which produces slight ventricular dilatation, with liquid inside with low signal at T1 (figure 1), heterogeneous with predominantly high signal in sequences with T2 information (Figure 2).

In the post-gadolinium study, the posterior two-thirds of the tumor intensifies with the contrast medium homogeneously (Figure 3). Spectroscopy shows an increase of the hill, with decreased N-Acetylaspartate in the center of the injury and at the left edge of the injury; increased myoinositol is seen throughout the tumor, which suggests a low-grade tumor (Figure 4). He did not undergo surgery for fear of complications.

Discussion

Intraventricular tumors debut with clinical symptoms of headache, vomiting, visual and memory deficits due to intracranial hypertension (1,2). The diagnosis in the presented case occurs in a way incidental, due to head trauma. During the 13 years of follow-up only refers to headache and bradypsychia. The duration of symptoms can vary from days to years and is mainly associated with the location of the tumor (2).

For the classification of brain tumours, the Histopathological analysis is the procedure of choice.



Key words (MeSH)

Central neurocytoma
Brain neoplasms
Magnetic resonance imaging

Palabras clave (DeCS)

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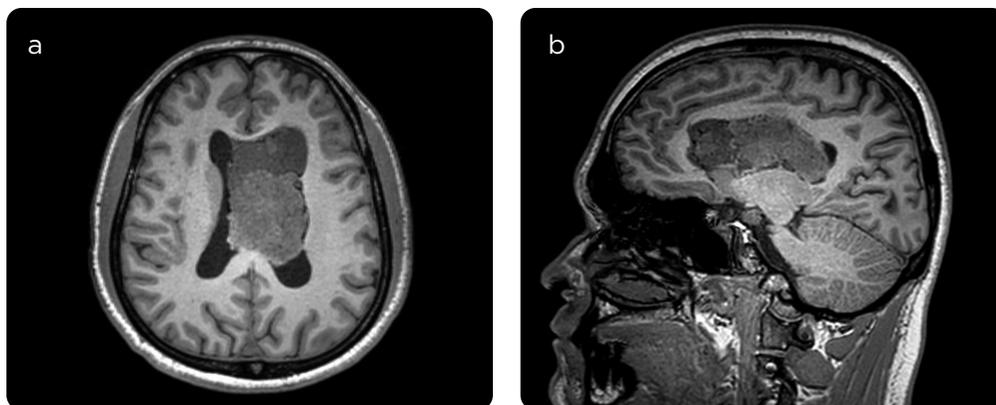


Figure 1. Central neurocytoma. MRI a y (b) axial and sagittal with T1 information large intraventricular lobed mass, heterogeneous, predominantly isointense with respect to the grey substance, with extension to the third ventricle and lateral ventricles, with predominance of on the left side.

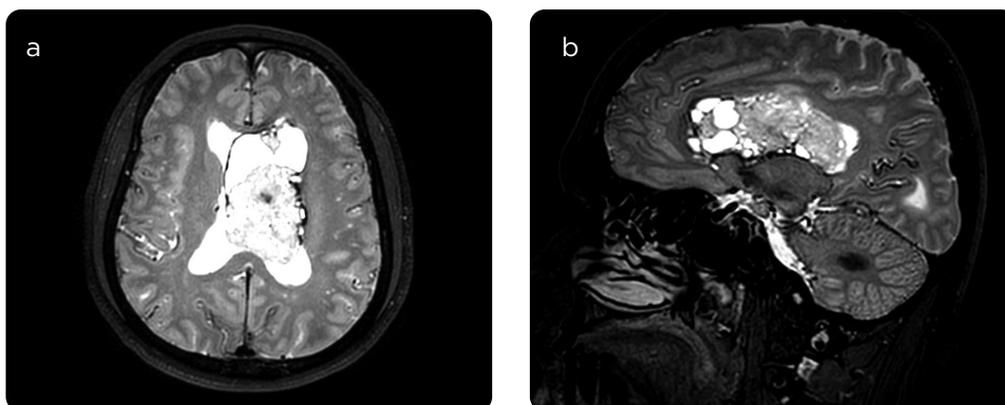


Figure 2. Central neurocytoma. MRI at and (b) axial and sagittal with information T2. Heterogeneous mass, with multiple small, high signal spotlights, with typical "bubble" look or "soap bubbles."

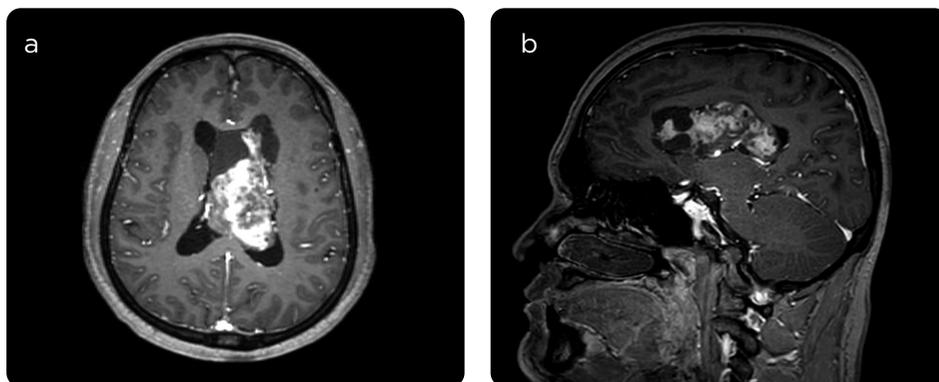


Figure 3. Central neurocytoma. MRI a and b) axial and sagittal with T1 information by contrast. Intense enhancement of the solid areas of the tumor.

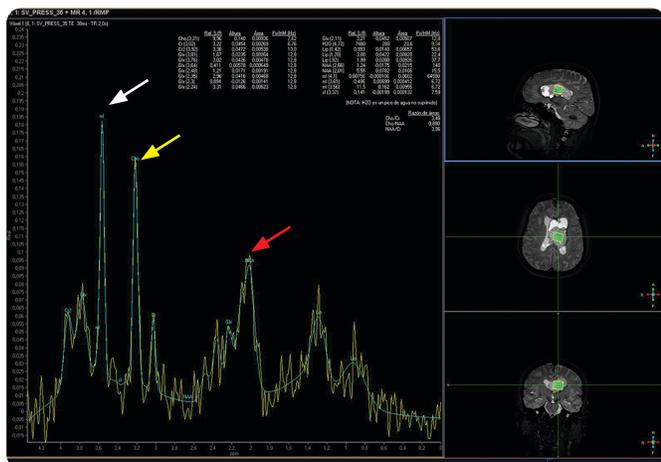


Figure 4. Spectroscopy of a central neurocytoma with peak magnification of hill (yellow arrow) and in the myo-inositol (white arrow), decrease at the peak of N-acetylaspartate (red arrow).

CT (4) and MRI images are useful in the differential diagnosis; however, correlation studies between image results and histology are not documented (2, 5). A characteristic radiologic sign of neurocytoma is hydrocephalus (4), but in this case only slight ventricular dilatation is observed. On MRI the central neurocytoma shows low to intermediate signal in T1 information sequences, and intermediate to high signal in T2 information sequences. Low signal in T2 information sequences may indicate hemorrhage, cyst or calcification (2, 6). In the case presented, the MRI showed areas of low signal in sequences with T1 information and high signal in sequences with T2 information, which corresponds to the pattern described.

MRI spectroscopy is important to estimate changes in metabolites. Elevated choline levels are observed in the most aggressive types of neurocytomas and decreased N-acetylaspartate is an indicator of loss of intact neuronal cells (6), which was confirmed in the case presented in this work.

The treatment of choice is surgical resection with radiotherapy conventional or radiosurgery in cases of incomplete resection or recurrence (1, 4). Complete resection is possible in 30-50 % of patients, with a 5-year survival rate of 99 %; in patients with partial resection, a rate of 86% is reported at 5 years (2). Imber and collaborators (7) evaluated a historical cohort of 28 patients with neurocytoma. In 32% of cases, complete resection of the lesion and in 68% subtotal resection. The patient of the presented case didn't agree to the surgery. He's 13 years old, with symptoms stable clinic over time.

Taking into account that the incidence varies between 0.1 % and 0.5 % it is considered relevant to contribute to the state of the art of this pathology with this presentation

Conclusions

Central Intraepithelial Neurocytoma is a rare pathology appearance, therefore, there are no studies to establish an optimal treatment behavior. It is vitally important to have it in counts in the differential diagnosis of intraventricular injuries, to define the behavior to be followed.

The progress of radiological studies facilitates the diagnosis and spectroscopy can be important in confirming it. Interestingly, the patient's favourable evolution, without having received the surgical treatment.

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