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Case Report

Growth Hormone Deficiency Secondary to Intrasellar Arachnoidocele?

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Received: December 13, 2018; **Published:** January 21, 2019

Abstract

Patients with dizziness, vertigo, headache, visual alterations, spinal brain fluid fistula and hormonal disorders are checked for Computerized Tomography (CT-scan) and Magnetic Resonance (MRI) studies of the skull, to rule out brain tumor and other vascular malformations. Sometimes we found incidentally an intrasellar extension of the subarachnoid space toward the cavity of the sella turca, the so call intrasellar arachnoidocele, considered as anatomic variant in most of the cases. Our patient is a 12-years-old boy with short stature and pectus excavatum. The bone age was compatible with 9-year-old and the growth hormone stimulating test for clonidine and L-Dopa were under normal range. The MRI revealed intrasellar arachnoidocele degree IV. He has all criteria for starting growth hormone. If we treat with growth hormone, without doing the excision before, which kind of catch-up growth we are expect to find? If we decided to do the surgery first, the patient will need growth hormone therapy later? Without compression, is possible to him to recover the normal growth velocity? Some questions are needed to be discussed before any decision to start or not growth hormone treatment.

Keywords: *Growth Hormone; Intrasellar Arachnoidocele*

Introduction

Patients with dizziness, vertigo, headache, visual alterations, spinal brain fluid fistula and hormonal disorders are checked for Computerized Tomography (CT-scan) and Magnetic Resonance (MRI) studies of the skull, to rule out brain tumor and other vascular malformations. Sometimes we found incidentally an intrasellar extension of the subarachnoid space toward the cavity of the sella turca, the so call intrasellar arachnoidocele, considered as anatomic variant in most of the cases. This intrasellar arachnoidocele, has been classified in four degrees: I: 25%, II: 50%, III: 75% and IV: 100%.

Case Report

A 12-years-old boy send to the genetic outpatient because of pectus excavatum. He is the second child of unrelated young and healthy parents. He has an older sister (19 years old) that was healthy. On his physical examination, we found short stature, pectus excavatum and the sexual maturation was delay for his age. His stature was 138.2 cm (SDS: -2.79). The growth velocity was 2.7 cm/year (SDS: 0.0). For the study of the cause of his short stature, we checked his karyotype that was normal. The thoracic CT scan showed pectus excavatum with no other changes. The bone age was compatible with 9 years old.

The insulin-growth factor was normal for age and sex: 218.5 ng/mL (normal: 49.0 - 520.0). Clonidine test with priming, showed maximum response at 60´: 5.96 ng/mL (normal: > 7) and L-Dopa test revealed maximum response at 30´: 0.41 ng/mL (normal: > 7). The brain magnetic resonance, showed intrasellar arachnoidocele.

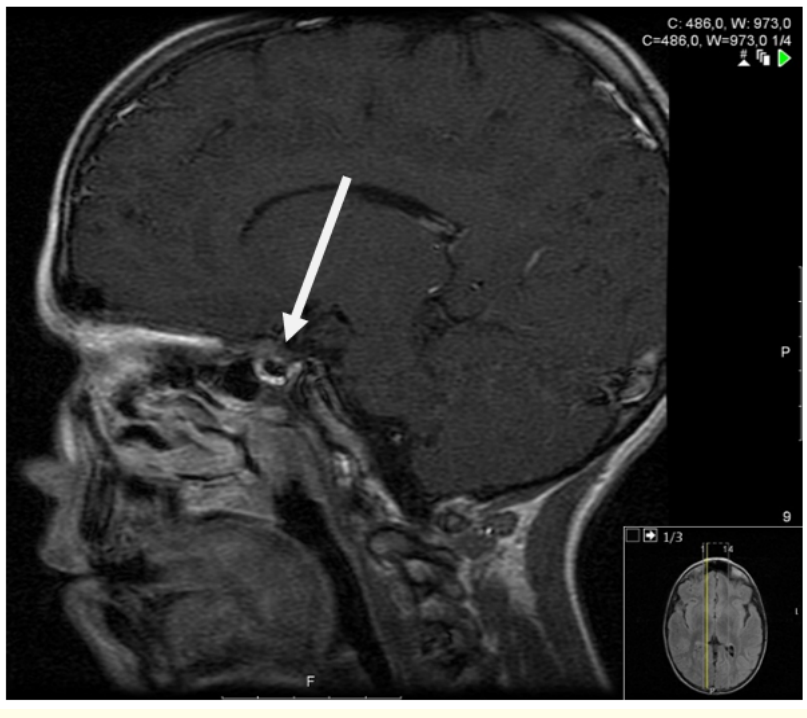

Figure 1: *Intrasellar arachnoidocele.*

Discussion and Conclusion

In one study published by Boleaga-Dúran B and Guzmán-Nuquez E on Anales de Radiologia México, 2008; 4: 219-224, a total 12030 brain CT-scan and MRI realized in the last twenty tears, 7.5% of intrasellar arachnoidocele was detected. The degree IV obtained the highest frequency, with a marked predominance in females (70%). Intrasellar arachnoidocele, are associated with visual disturbances and endocrine findings [1-3].

Growth hormone deficiency in children secondary to intrasellar arachnoidocele seems to be a very rare situation. Our case has this association and the question is what we can offer to this patient.

The patient velocity is low; he has short stature and delay sexual development. All of these clinical findings are associated with no response to growth hormone stimulating test and delay bone age. He has all criteria for starting growth hormone. For the other point of view, we know that the intrasellar arachnoidocele in our case is degree IV and this mean that is responsible for the compression of the sella turcica. If we treat with growth hormone, without doing the excision before, which kind of catch-up growth we are expected to find? If we decided to do the surgery first, the patient will need growth hormone therapy later? Without compression, is possible to him to recover the normal growth velocity?

Some questions are needed to be discussed before any decision to start or not growth hormone treatment.

In this particularly case, seems that surgery is the first choice treatment because the intrasellar arachnoidocele is causing compression. After surgery, we can see the evolution of the growth velocity of the patient in the next six months and if he can have catch up growth. Later we can repeat the growth hormone stimulation test to see if the response is below the expectable range. If still under normal value, we can start growth hormone treatment in this patient.

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Volume 8 Issue 2 February 2019