Benign intracranial hypertension in children can be due to hypoparathyroidism: a case-report

Giorgia Sforza 1, 2, Annalisa Deodati3, Laura Papetti2, Barbara Battan2, Paolo Curatolo1, Federico Vigevano2, Massimiliano Valeriani 2, 4

1. Child Neurology and Psychiatry Unit, Tor Vergata University; 2. Headache Center, Department of Neuroscience, Bambino Gesù Children Hospital, Rome, Italy; 3. Endocrinology Unit, Bambino Gesù Children Hospital, Rome, Italy; 4. SMI Center, Aalborg University, Aalborg, Denmark

Introduction

Idiopathic intracranial hypertension, otherwise known as primary pseudotumor cerebri syndrome (PTCS), most frequently occurs in obese women of childbearing age. However, children may be affected as well. The aim of this scientific contribute is to present the rare case of a girl with idiopathic intracranial hypertension (IIH) secondary to hypoparathyroidism (HPTH).

Methods

Workup of a 9-year-old girl with IIH and HPTH, including physical examination, blood tests, diagnostic imaging, and lumbar puncture.

Results

We present a 9-year old female patient who was hospitalized for headache associated with nausea and vomiting for 3 weeks. She underwent ophthalmologic examination which showed papilledema. She had never had cramps, paraesthesias or tetany. Lumbar puncture (LP) revealed an opening pressure of 65 cm H2O. CSF analysis and brain CT scan were normal. The patient was started on acetazolamide 375 mg/die. However, a low serum calcium level (6.3 mg/dL) was found, thus leading us to suspect HPTH. Indeed, phosphorus was 10.2 mg/dL, parathormone was very low (3 pg/mL). Chvostek and Trousseau signs scored positive. Neck ultrasonography showed normal thyroid, while parathyroids were not viewable. Oral supplementation with calcitriol (0.50 mcg/day) and calcium (500 mg/day) was started.

Conclusions

IIH is defined as an elevated intracranial pressure (>25 cmH2O) without clinical, laboratory or radiological evidence of hydrocephalus, infection, tumor or vascular abnormality. Annual incidence is 1-2 per 100,000. Several hypotheses have been proposed for the IIH pathophysiology, but none of them has reached a general consensus. Rare cases of IIH secondary to HPTH have been described (Aragones and Alonso-Valdés, 2014). It is supposed that hypocalcemia causes a decrease in the CSF absorption at level of the arachnoidal granulations (Sambrook and Hill, 1977). Interestingly, our patient did not present with the typical neurological HPTH symptoms, such as tetany, cramps, paraesthesias, seizures, behavioral disorders, and intracranial calcifications. Only the serum calcium dosage led us to suspect this condition. Therefore, we recommend that possible HPTH should be always checked in children with clinical findings of benign intracranial hypertension.

References

1. Aragones JM, Alonso-Valdés F. Hipertensiòn intracraneal benigna secundaria a hipoparatiroidismo. Rev Neurology 2014; 58: 94.

2. Sambrook MA, Hill LF. Cerebrospinal fluid absorption in primary hypoparathyroidism. J Neurol Neurosurg Psychiatry 1977; 40:1015-7.