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Case report

Intracranial hypotension syndrome: A post dural puncture headache?☆

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ABSTRACT

The intracranial hypotension syndrome (IHS) is a disorder caused by brain descent due to a CSF leak resulting from diagnostic, therapeutic or spontaneous lesions. The pathophysiology, the clinical and the therapeutic approach are similar as in post dural puncture headache, the latter being considered a mild form of IHS. This paper describes two patients with orthostatic headache and severe neurological involvement after epidural and spinal anesthesia, diagnosed and treated as post dural puncture headache, but who required additional care because of their abnormal course. IHS is a serious complication that may result in clinical decline and death; consequently, it requires a comprehensive approach to the various triggering factors, the clinical picture, diagnostic methods, pathophysiology and management.

Síndrome de hipotensión endocraneana; ¿una cefalea postpunción dural?

Palabras clave:
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RESUMEN

El síndrome de hipotensión endocraneana (SHE) es una patología causada por el descenso del cerebro debido a fuga de líquido cefalorraquídeo a partir de lesiones durales diagnósticas, terapéuticas o espontáneas. Tanto la fisiopatología como el enfoque clínico y terapéutico son similares a la cefalea postpunción dural, siendo esta ultima considerada como una forma leve del SHE. Se describen 2 pacientes con cefalea ortostática y alteraciones neurológicas severas luego de anestesia epidural y espinal que fueron diagnosticados y tratados como cefalea postpunción dural, pero que por su evolución anormal debieron recibir atención adicional. El SHE constituye una complicación seria que puede llevar al deterioro clínico y a lamuerte,

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motivo por el cual requiere de un abordaje integral sobre sus factores desencadenantes, cuadro clínico, métodos diagnósticos, fisiopatología y manejo.

Case 1

The first case was a 24-year-old female with mammary hypoplasia, ASA I, who underwent augmentation mammoplasty under epidural anesthesia and sedation. An epidural catheter was placed at the level of T3–T4, using an 18-gauge needle. Multiple attempts were required for its placement, but without evident dural lesion; the test with 3 ml of 0.5% bupivacaine plus epinephrine 1:200,000 was negative for subarachnoidal and intravenous administration; the anesthetic mix was then administered. The procedure was completed with no complications and the patient then continued under ambulatory management.

Three days after surgery, the patient presented with dizziness, vomiting, orthostatic headache and pre-syncopal episodes. Management was started with an NSAID and acetaminophen plus codeine, bed rest, oral and intravenous hydration. On the following day, she presented with horizontal nystagmus and diplopia, and was treated with a blood patch.

On day five, the clinical picture still persisted and a space-occupying lesion was suspected. A gadolinium-enhanced magnetic resonance imaging (MRI) of the brain was normal. Oral alprazolam and dimenhydrinate were added.

On the tenth day, symptoms improved, although there was slight persistence of dizziness and vertigo on ambulation. Four weeks later, the patient went back to her normal activity, with no sequelae.

Case 2

The second case was a 24-year-old male patient who underwent knee surgery under spinal anesthesia. Over the following days, there was gradual development of orthostatic headache and horizontal diplopia. A gadolinium-enhanced brain MRI revealed diffuse meningeal thickening, and outpatient management with analgesics was started.

The intensity of the headache increased and was associated with nausea and vomiting, which worsened with ambulation.

Twenty days later, the patient presented with somnolence, episodes of disorientation and sixth cranial nerve involvement. A new MRI revealed diffuse cerebral edema, herniation of cerebellar amygdalae, diffuse meningeal inflammation, bilateral subdural fronto-temporal collections, and a few signs of acute phase bleeding (Fig. 1).

The patient was taken to drainage of the subdural hematoma and postoperative management in the hospital for two days, with absolute bed rest and hydration that resulted in total resolution of the symptoms.

Discussion

Both patients developed orthostatic headache and neurological changes that were initially evaluated and managed as post dural puncture headache of unusual presentation or additional complications. However, the clinical course of these patients has a more important background, where the IHS emerges as the most accurate diagnosis, as will be discussed below.

What are the signs and symptoms of IHS?

The clinical picture is commonly characterized by orthostatic headache of variable characteristics and localization, which becomes exacerbated with coughing, jugular compression and Valsalva Maneuvers. Additionally, there may be involvement of cranial nerves II, III, IV, VI and VIII, and of the cervical nerve roots, always of orthostatic nature. In severe cases, it may be associated with deterioration of consciousness, and death (Table 1).[1,2]

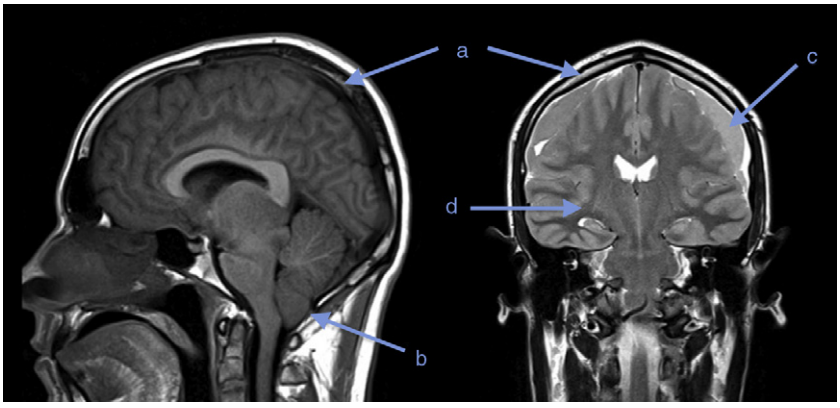

Fig. 1 – Brain MRI. (a) Diffuse dural thickening, (b) herniation of the cerebellar amygdalae, (c) bilateral fronto-temporal subdural collections, (d) diffuse cerebral edema.