

VIth Cranial Nerve Paresis After Spinal Anesthesia

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Abstract

INTRODUCTION

Postdural puncture headache (PDPH) is an infrequent side effect of diagnostic, anesthetic, therapeutic or accidental dura mater puncture. This fronto-occipital headache can be accompanied by wambles, emesis, photophobia, hypoacusia and sometimes involvement of cranial nerves.¹ The incidence of this complication of spinal anesthesia is unknown, although it is thought that the association of PDPH and diplopia related to VIth cranial pair paresis can be observed with a frequency that oscillates from 0.012% to 0.020%₂ of the total lumbar punctures. Romero,³ after a review of the literature from the year 2000, only finds 9 published cases of VIth cranial pair paresis after spinal anesthesia in the last 20 years.

CASE REPORT

We present here a case of left VIth cranial nerve paresis that appeared after a spinal anesthesia performed with a 27G Sprotte needle for elective right knee diagnostic arthroscopy.

The patient was a 59 year old white male without previous surgical history. He was free of any allergic, diabetic or hypertension problems and he didn't have any toxic habits either. He had been diagnosed with Crohn's disease 3 months before, but received no treatment at the time of surgery. Spinal anesthesia was performed in single attempt at the L3-L4 with a 27G Sprotte needle. Nine mg of 0.5% hyperbaric bupivacaine were administrated together with 35 mcg fentanyl, in a total volume of 2,5 mL, leading to a T10 block. Surgery was uneventful. 24 hours later, he suffered a PDPH which was treated with hydratation, abdominal bandage and paracetamol-codeine. The symptoms disappeared in the following 48 hours. Then he was discharged with no neurologic symptoms.

Six days after the lumbar puncture the patient suffered diplopia and came urgently to the hospital. Clinical exam

revealed a left VIth cranial nerve paresis and binocular diplopia on conjugated look without headache or any meningeal symptoms. The rest of the neurologic exploration was normal. Cranial an thoracic X-rays were also normal, as well as blood biochemistry with normal proteinogramme. Cranial computerized axial tomography was normal and magnetic resonance imaging did not show any parenchymal alteration. The patient was admitted for observation with diagnosis of a left VIth nerve paresis, due to a low pressure of the cerebrospinal fluid (CSF), and treated with oral rehydration treatment, vitamin B and C complexes, and alternate eyes occlusion. 48 hours later, he was discharged and scheduled for weekly visits to the hospital's anesthesiology service. The symptoms remained for two more weeks and then they began to disappear slowly. The patient recovered complete mobility of the eye on the 63th day after the puncture.

DISCUSSION

Loss of CSF through the hole of a puncture seems to be the cause of the low CSF pressure with PDPH due to loss of encephalon's hydraulic suspension. The same mechanism of intracranial hypotension is probably responsible for cranial nerves paresis. The VIth cranial nerves pair is more frequently affected than any other cranial nerve because its long trajectory along the cranial base where it can be easily submitted to traction provoking its functional alteration^{4,6}. The use of smaller puncture needles of a lesser gauge was associated with a decrease of such complications⁷. Although others treatments, such as epidural blood patch, have been tried, conservative treatment with IV and oral hydration, vitamin B and ocular closure is still used due to the failure of other treatments⁴. Because of the good prognosis described in the literature (2/3 are solved within a week and the majority before a six months time), it is important to reassure the patient who thinks he is having serious problems that might restrain his life considerably.

Szokol⁴ and Dumber⁷ describe similar complications when using bigger gauge's needle (27G). The former uses 17G and the latter describes two cases using 27G needles with a three and four month's duration respectively with subsequent bilateral affectation, and another case using 20G needles with subsequent facial affectation and deafness for four months. Both authors use the blood patch without success^{4,7,10}.

The presence of VIth cranial nerve paresis without previous dural puncture is very rare. The commonest causes of non iatrogenic paresis are: vasculopathies (29%); tumors (16%); multiple sclerosis (12%); inflammation (8%) and trauma (6%), other possible causes are hydrocephalia and the use of intravenous nitroglicerín⁴.

In young patients the casuistic is different. Neoplastic origin predominates up to 45% and idiopathic causes are found in one out of twenty cases⁸. The appearance of PDPH after dural puncture together with VIth cranial nerve paresis makes us put aside any of the afore mentioned aetiologies. In addition, axial tomography to evaluate the topography and density of the lesion and magnetic resonance (MRI) , excluded any other causes.

We can say that this clinical picture, though unusual, provokes fear in affected patients. Therefore, the first thing we should do is to calm our patient and maintain an expectancy attitude. At the same time, other pathologies have to be excluded. In spite of the alarming clinical picture, Day², got in touch in 1996 with two British insurance companies, and surprisingly, found that just one case of diplopia after spinal anaesthesia had been reported. The case was investigated and no negligence could be proved.

CONCLUSION

As conclusion we could state that VIth cranial nerve paresis is a rare complication in which blood patch is ineffective and whose recovery is usually spontaneous.

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