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Editorial

Is it necessary to continue treating what was caused by one puncture with another one?☆



¿Es necesario seguir curando con una punción lo que se ocasionó con otra?

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Post-dural puncture headache is a significant cause of morbidity associated with the practice of obstetric anesthesia.¹ The knowledge of its pathophysiology and management is of crucial importance for both anesthesiologists involved in the case and those in charge of informing the patient about treatment alternatives. Despite the progress in knowledge of the causes of this type of headache, the epidural blood patch remains the treatment of choice. It is difficult to make patients understand that, despite the discovery and implementation of sophisticated technologies for the administration of anesthesia, the treatment of the symptom caused by the creation of an orifice in the dura mater consists of making a second puncture and depositing a variable volume of their own blood in a space that normally has no extravasated blood. Faced with this scenario, scientific curiosity should lead us to critically review both the usefulness of conservative methods used in the past and the evidence about the use of innovative techniques in the process of scientific validation, to try to find a substitute that is acceptably equivalent to the epidural blood patch.

Since the first report of post-dural puncture headache in 1898, in which Bier was simultaneously patient and author,² the symptoms associated with this disorder have been attributed to the passage of cerebrospinal fluid through the dural orifice, resulting in a decrease of intracranial pressure and traction of pain-sensitive structures such as meningeal

vessels and cranial nerves.³ The incapacitating nature of post-puncture headache in the obstetric patient, possibly deprived of sleep and who also has the duty to attend to the needs of the newborn, demands the administration of a timely and effective treatment from the anesthesiologist.

The epidural patch has been used for decades in obstetric practice with variable success. In a systematic review published in 2010, Boonmak and Boonmak⁴ demonstrated that the epidural patch was superior to conservative treatment to reduce the intensity and duration of headache. However, the incidence of lower back pain was also higher. The authors found that given the limited number of participants in the studies analyzed and doubts about their methodology it is difficult to reliably assess the benefits and risks of the intervention. In contrast, several randomized clinical trials demonstrate the efficacy of the epidural blood patch in a clear manner, supporting its continued use as therapy of choice for the treatment of the post-puncture headache syndrome.⁵⁻⁸ The systematic review carried out by the Cochrane Collaboration in 2010 probably summarizes the current status of the blood patch as therapy of choice when it states: "The review authors do not recommend prophylactic epidural blood patch over other treatments because there are too few trial participants to allow reliable conclusions to be drawn. However, therapeutic epidural blood patch showed

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a benefit over conservative treatment, based on the limited available evidence.”⁴ A new Cochrane review was conducted in 2013 but it was “withdrawn” from the PUBMED database, so the conclusions published in 2010 remain in force.

On the other hand, conservative treatment has been understood to be the use of non-invasive measures that relieve symptoms while post-puncture headache resolves spontaneously, which occurs in more than 85% of cases.⁹ In addition to bed rest and adequate hydration, some therapies have been used with variable results. Although in their systematic review Halker et al. concluded that caffeine is an effective treatment, when we examine in detail the studies that support this conclusion it is observed that in one of them the difference in favor of oral caffeine is not statistically significant, while in the other the conclusion in favor of intravenous caffeine is overshadowed by multiple methodological failures in the randomization process.¹⁰ The use of adrenocorticotrophic hormone emerged as a promising option from small studies that reported success rates near 95%; however, Rucklidge et al.¹¹ conducted a randomized trial with 18 patients who showed no difference in the need for an epidural patch when compared to the placebo intervention. Other therapies such as the use of gabapentin and hydrocortisone have shown a modest effect.^{12,13} Although the use of conservative measures such as those described above has shown variable effectiveness, the safety of its administration favors its use as the first line therapy in some cases.^{14,15}

The recent reports of the use of transnasal sphenopalatine blockade in the maternal population have brought great enthusiasm. Sphenopalatine blockade has been used in chronic conditions such as migraine, Horton's headache and trigeminal neuralgia. Cohen et al.¹⁶ reported their experience with the use of this technique in 13 patients showing immediate success in 84.6% of the cases. The same authors presented a series of cases of 32 obstetric patients in whom the epidural patch could be avoided in 69% of the cases.¹⁷ Finally, Kent and Mehaffey¹⁸ reported a series of cases with 100% effectiveness. The technique is very simple and it consists of introducing a cotton swab impregnated with 4% lidocaine gel into each nostril, with the patient in supine position, until the end of the swab is located in the nasopharynx. The applicator is held in place for half an hour, after which the patient can sit down. In our institution we have had positive results in sufficient magnitude to undertake a randomized experimental study comparing the nasal sphenopalatine blockade with the epidural patch in the obstetric population. We hope to publish our results in 2017.

Considering that the epidural blood patch is a technique that generates fear in our patients and whose use is not completely harmless, I consider that the time has come to pave the way for methods that have proved to be useful in the management of other types of headaches and are showing preliminarily value in the difficult scenario of obstetric analgesia/anesthesia. The ease of use and the minimal risks associated with sphenopalatine blockade may convert this technique into either the replacement of the epidural patch or at least into an adjuvant to increase the effectiveness of discredited conservative measures. Even the use of the sphenopalatine block, as part of the management algorithm to reduce the number of patients that require the blood patch,

would highlight its value in the obstetric anesthesiologist's armamentarium.

In conclusion, in the context of obstetric anesthesia we have been using the blood patch based on evidence that is still insufficient to draw conclusions on, although there are indications of its possible benefit.² No anesthesiologist likes the blood patch, but we all use it because we do not rely on conservative measures. I refuse to believe that we must spend another 50 years with the blood patch as the primary therapeutic weapon to treat post-puncture headache in the postpartum period. Our experience with the sphenopalatine blockade at the University of Colorado has been favorable and invites us to open the door to a real alternative treatment for a syndrome with important medical implications and consequences on the family dynamics of the maternal patient in the first few days after labor.

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Conflicts of interest

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