

CASO CLÍNICO / CASE REPORT

Peribulbar Block for Blood Plug in Corneal Hydrops: Case Report

Bloqueio Peribulbar para Tampão Sanguíneo em Hidropsia da Córnea: Relato de Caso

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Palavras-chave

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ABSTRACT

Acute corneal hydrops (ACH) is a rare ocular injury, with high comorbidity, with several surgical techniques described, but which continues to have high rates of therapeutic failures, surgical reapproaches and complications. This work presents the case of a young patient with ACH secondary to keratoconus treated with the unusual method of applying an autologous blood patch to the corneal stroma and describes the experience of the peribulbar block as an anesthetic strategy to manage an ophthalmological condition that manifests several physiological changes and anatomical features in the orbital region.

RESUMO

A hidropisia corneana aguda (ACH) é uma lesão ocular rara, com alta comorbidade, com diversas técnicas cirúrgicas descritas, mas que continua apresentando altos índices de falhas terapêuticas, reabordagens cirúrgicas e complicações. Este trabalho apresenta o caso de um paciente jovem com HCA secundária a ceratocone tratado com o método incomum de aplicação de tampão sanguíneo autólogo no estroma corneano e descreve a experiência do bloqueio peribulbar como estratégia anestésica para o manejo de uma condição oftalmológica que manifesta diversas alterações fisiológicas e características anatómicas na região orbital.

INTRODUCTION

Peribulbar block (PB) has become popular due to its practicality and low cost when compared to sub-Tenon's block, and with a lower chance of complications compared to retrobulbar block. It involves the administration of local anesthetic through an extraconal injection, parallel to the orbital wall, in an inferotemporal puncture, which, in certain situations, can be combined with a medial puncture.¹

Acute corneal hydrops (ACH) occurs when the corneal stroma is infiltrated by aqueous humor through a fissure in the Descemet's membrane causing local edema. It can occur as a result of corneal ectasia, as a complication in 2.4% to 3% of cases. Treatment can be through conventional methods such as intracameral air or gas application, compressive sutures, thermokeratoplasty or platelet-rich plasma concentrate.²

This work describes PB's experience in the management of giant hydrops secondary to keratoconus in a young patient who underwent corneal tamponade with autologous blood.

CASE REPORT

A male patient, 19 years old, 176 cm, 67 kg, ASA II, atypical facies, without cognitive deficit, with hydrocephalus with ventriculoperitoneal shunt implant, on continuous use of carbamazepine and risperidone, was admitted to the ophthalmology service complaining of reduced visual acuity in the left eye (LE), in addition to pain, tearing and swelling that had progressively worsened for a month. On examination, the LE was hyperemic, edematous and had extensive protrusion of the cornea. ACH was diagnosed with an insidious and severe evolution, as a complication of previous keratoconus. The patient already had a previous history of topical pharmacological treatment, in addition to surgery with intracameral application of sulfur hexafluoride (SF6), however, without improvement. Therefore, therapy with intrastromal injection of autologous blood was proposed for the treatment of HCA. Discussing with the surgeon about the chosen technique and, considering that, in the previous procedure, the gas infusion resulted in intense postoperative pain, sedation associated with PB was chosen as the anesthetic plan.

In the operating room, the young man was positioned in the horizontal supine position, venoclysis was performed on the right forearm with a 22G catheter and monitoring with pulse oximetry, cardioscopy and non-invasive blood pressure. Sedation was performed with intravenous bolus administration of midazolam, 1.5 mg, and fentanyl, 35 mcg. Oxygen gas was

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offered at 1 L/min through a nasal catheter. Soon after, BP was performed with a mixture of 1.5 mL of 2% lidocaine with epinephrine (1: 200 000) and 2 mL of 1% ropivacaine injected with a 20x0.55 mm needle with a puncture in the inferolateral zone of the orbital rim of the LE. (Fig. 1).

Immediately after the surgeon's command, blood collection was carried out using an antiseptic technique and sterile materials, with venipuncture in the cubital fossa of the left upper limb. From this a 3 mL sample was taken to perform the blood patch (Fig. 2). Under microscopic vision, the ophthalmologist fills the vacuoles and corrects the edema of the corneal stroma by injecting autologous blood.



Figure 1. Peribulbar block of the left eye

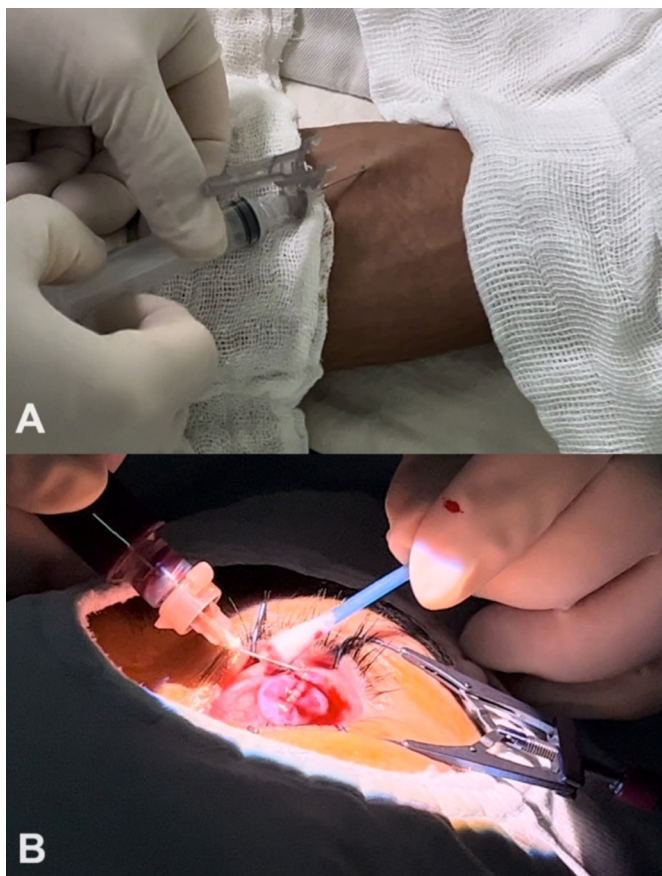


Figure 2. Autologous blood collection intraoperatively using antiseptic technique and sterile materials (A). Injection of the blood patch to the stroma (B).

The procedure occurred without complications or any setbacks involving anesthetic and surgical techniques. In the end, the patient was conscious and had no complaints of pain, and was scheduled to be discharged home. After approximately three weeks post-operatively, in an outpatient consultation, there was good progress in the treatment of ACH, without the discomfort of pain experienced in previous approaches.

DISCUSSION

At the time of writing this work, the search for the subject on the main scientific literature platforms made it clear that there is still a lot to be studied and analyzed concerning the practice of blood patching for the treatment of ACH and, consequently, the application of PB as an anesthetic option. A report from the 90s, by Regis *et al*, presents a case with an excellent result from the injection of autologous blood into the HCA in a thirteen-year-old male with keratoconus, but did not complain of pain, an essential difference in relation to our patient.³

When opting for PB, we considered the negative experience of intense pain reported by the patient in the postoperative period of previous surgery (SF6 injection). The block guarantees perioperative analgesia, in addition to intraoperative ocular immobilization, optimizing the surgical field. A prospective cohort study compared BP with general anesthesia and concluded that patients who underwent local block experienced less pain compared to the other group, in vitrectomy surgeries.⁴

Studies on the management of ACH place PB as an infrequent anesthetic choice, as opposed to topical anesthesia with pilocarpine and general anesthesia.² Furthermore, there is a lack of data on the use of blood patches in corneal ectasia that could guide the best choice of anesthetic treatment planning for the patient. Even recent reviews are still superficial in their approach to the topic.² According to our searches, we did not find comparative studies for the choice of anesthetic in surgeries for corneal ectasia, or ACH. Intuitively, BP would be the least likely option, considering the anatomical and physiological changes in the eye with corneal injury, the proptosis caused by the dispersion of the anesthetic and the possibility of the block interfering with the quality of the blood patch. Even so, we report a good experience with the technique, which proved to be safe and advantageous for the patient.

DECLARAÇÃO DE CONTRIBUIÇÃO / CONTRIBUTORSHIP STATEMENT

MTF, CT: Conception and design of the study; data collection and text composition.

LPÁ: Data collection.

GSE: Text composition.

All authors approved the final version to be published.

MTF, CT: Conceção e desenho do estudo; recolha de dados e composição do texto.

LPÁ: Recolha de dados.

GSE: Redação do texto.

Todos os autores aprovaram a versão final a ser publicada.

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