



Original contribution

Supplementation of retrobulbar block with clonidine in vitreoretinal surgery: effect on postoperative pain^{☆,☆☆,★}

Vanda G. Yazbeck-Karam MD (Associate Professor)^{a,b},
Sahar M. Siddik-Sayyid MD (Associate Professor)^b,
Elie L. Abi Nader MD (Assistant Professor)^a, Daisy E. Barakat MD (Instructor)^a,
Hoda S. Karam MD (Lecturer)^a, Georges M. Cherfane MD (Lecturer)^c,
Jalal N. Hajj Hussein MD (Resident)^c, Marie T. Aouad MD (Associate Professor)^{b,*}

^aDepartment of Anesthesiology, Rizk Hospital, Beirut, Lebanon

^bDepartment of Anesthesiology, American University of Beirut Medical Center, Beirut, Lebanon

^cDepartment of Ophthalmology, Rizk Hospital, Beirut, Lebanon

Received 10 September 2009; revised 18 November 2010; accepted 13 December 2010

Keywords:

Anesthesia, regional;
Clonidine;
Eye surgery;
Postoperative pain;
Retrobulbar block;
Vitreoretinal surgery

Abstract

Study Objective: To evaluate the effect of clonidine when added to local anesthetics on duration of postoperative analgesia during retrobulbar block.

Design: Prospective, randomized controlled trial.

Setting: Operating room and Postanesthesia Care Unit of a university-affiliated hospital.

Subjects: 80 ASA physical status 1, 2, and 3 patients undergoing vitreoretinal surgery with or without scleral buckling.

Interventions: Patients in the control group (n = 40) received a retrobulbar block with 4.5 mL of lidocaine-bupivacaine and 0.5 mL of saline. Clonidine group patients (n = 40) received 4.5 mL of lidocaine-bupivacaine and 0.5 µg/kg of clonidine in a 0.5 mL volume.

Measurements: The time to first analgesic request, frequency of postoperative pain, and number of postoperative analgesic requests per patient were assessed.

Main Results: 37 patients in the control group (92.5%) versus 24 patients (60%) in the clonidine group reported pain postoperatively ($P = 0.001$), with a shorter time to first analgesic request noted in the control group (4.9 ± 3 vs 11.9 ± 5.3 hrs; $P < 0.001$). The median number of postoperative analgesic requests per patient during the first 24 hours was higher in the control group than the clonidine group [2 (0-3) vs. 1 (0-3); $P < 0.001$].

Conclusions: The addition of clonidine 0.5 µg/kg to the local anesthetics of a retrobulbar block for vitreoretinal surgery decreases the frequency of postoperative pain and prolongs the time of analgesia. © 2011 Elsevier Inc. All rights reserved.

☆ Presented in part at the Annual Meeting of the European Society of Regional Anesthesia, Valencia, Spain, Sept. 12-15, 2007.

☆☆ Supported by the Department of Anesthesiology, Rizk Hospital, Beirut, Lebanon, only.

★ The authors have no conflicts of interest to disclose.

* Corresponding author. Tel.: +961 1 35 0000x6380; fax: +961 1 74 5249.

E-mail address: mm01@aub.edu.lb (M.T. Aouad).

1. Introduction

The use of regional anesthesia for vitreoretinal surgery has become increasingly popular because it is associated with fewer respiratory and hemodynamic untoward events, better postoperative pain relief, and less nausea and vomiting than general anesthesia [1,2]. Regional anesthesia is especially advantageous in vitreoretinal surgery when very early positioning is required following gas bubble injection, as in the case of retinal relocation surgery for macular degeneration [3]. Vitreoretinal surgery is a lengthy procedure that sometimes requires intraoperative supplementation of the block [4], and it may be associated with significant postoperative pain [5]. Most patients with vitreoretinal pathology are elderly and exhibit multiple systemic diseases such as diabetes or cardiovascular diseases that may limit the use of systemic analgesics such as nonsteroidal anti-inflammatory drugs [6]. The use of opioids for postoperative analgesia also is associated with an increased incidence of postoperative nausea and vomiting, which may be detrimental if accompanied by an increase in intraocular pressure (IOP) [7].

Additives have been used to prolong the duration of retrobulbar block. Epinephrine has been used for this purpose. However, its use in orbital regional anesthesia is controversial because in elderly patients it may reduce the blood supply to the vital structures of the globe [8]. Furthermore, epinephrine may potentiate myotoxicity of local anesthetics [9]. Postoperative analgesia extending beyond the duration of a long-acting local anesthetic such as ropivacaine or bupivacaine may be achieved by a continuous local anesthetic technique with the insertion of a catheter into the retrobulbar or peribulbar space [4,10]. However, many ophthalmic surgeons are reluctant to use continuous catheter techniques postoperatively.

The addition of clonidine, an alpha(2)-agonist, to local anesthetics prolongs analgesia and akinesia in retrobulbar and peribulbar blocks for cataract surgery [11-14]. Our hypothesis was that the addition of clonidine to the local anesthetic mixture of the retrobulbar block would prolong the time to first analgesic request following vitreoretinal surgery (primary outcome). Secondary outcomes were the need for intraoperative supplementation, frequency of postoperative pain, number of postoperative analgesic requests per patient, and patients' satisfaction.

2. Materials and methods

After obtaining approval from Rizk Hospital Ethics Committee and patients' informed consent, 80 ASA physical status 1, 2, and 3 patients who were scheduled for elective vitreoretinal surgery were enrolled in the study. Exclusion criteria were allergy to local anesthetic solutions, uncontrolled hypertension, chronic cough, chronic clonidine or

analgesic therapy, coagulation impairment, orbital abnormalities, glaucoma, and patients who were unable to cooperate in maintaining a relatively motionless supine position or who refused the anesthetic technique.

After a routine preoperative evaluation, all patients were premedicated with diazepam 5 mg orally one hour before the surgical procedure. Patients were randomly allocated by a computer-generated table of random numbers to receive the eye block with 5 mL of the following solution: 4.5 mL of a 1:1 mixture of bupivacaine 0.5% and lidocaine 2%, and hyaluronidase 5 units/mL and either 0.5 mL of normal saline (control group: n = 40) or 0.5 mL of clonidine (Catapres; clonidine group: n = 40). Clonidine 150 µg/mL was diluted with normal saline to obtain 0.5 µg/kg in 0.5 mL. The results of the randomization were concealed in opaque envelopes and opened sequentially. The mixtures were prepared by an anesthesia resident who was not involved in data collection.

Standard monitoring, including noninvasive arterial blood pressure (BP), electrocardiogram (lead II), and oxygen saturation by pulse oximetry (SpO₂), were applied. The eye block was performed by one of two anesthesiologists (VG, ELAN) who had substantial expertise in administering regional anesthesia for ophthalmic surgery. Both the anesthesiologist performing the block and the patient were blinded to the composition of the anesthetic mixture. Topical anesthesia to the conjunctiva with 0.4% oxybuprocaine drops was given before performing the block. The globe was maintained in a neutral gaze position; then a 25-gauge, 30 mm needle ophthalmic cannula (Streriseal; Unomedical, Ltd, Redditch, UK) was introduced percutaneously in the inferotemporal quadrant as far laterally as possible. The initial direction of the needle was tangential to the globe; the needle was then passed below the globe. Once past the equator, as gauged by the axial length of the globe, the needle was allowed to go upwards and inwards. Five mL of anesthetic solution was slowly injected after aspiration. This was followed by a percutaneous injection of 2.0 mL of lidocaine-bupivacaine mixture at the level of the supraorbital notch to block the orbicularis muscles and obtain lid anesthesia.

To promote spread of the local anesthetic solution and decrease IOP, gentle digital massage was done. Motor block was assessed 5, 10, and 15 minutes after injection. Ocular globe motility was evaluated in the four quadrants using a 3-point scoring system, where 0 = no movement, 1 = reduced movement, and 2 = normal movement, with a maximum possible score of 8 for the four muscles. A score ≤ 2 indicated successful block. If inadequate motor blockade was observed 10 minutes after placement of the block, an additional injection of 2.0 to 4 mL of lidocaine-bupivacaine mixture inferolaterally was given before the surgery was allowed to start. Supplemental injections of lidocaine 2% also were given by the surgeon by sub-Tenon infiltration to patients who experienced pain during the surgery. The time of occurrence of intraoperative pain was recorded. No intravenous (IV) sedation or analgesia was administered.

Download English Version:

<https://daneshyari.com/en/article/2763346>

Download Persian Version:

<https://daneshyari.com/article/2763346>

[Daneshyari.com](https://daneshyari.com)