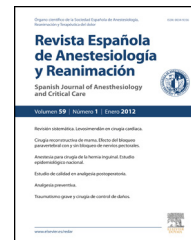




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ORIGINAL ARTICLE

Contact topical anesthesia for strabismus surgery in adult patients^{☆,☆☆}



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KEYWORDS

Strabismus;
Local anesthesia;
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Abstract

Objective: To analyze the effectiveness and usefulness of contact topical anesthesia in strabismus surgery in adult patients.

Material and methods: A prospective study was conducted on 20 patients undergoing strabismus surgery using contact topical anesthesia and sedation with remifentanyl. The intensity of pain was recorded using a numeric pain rating scale at the time of anesthesia implementation, during the surgical procedure, 30 min afterwards, and during the first postoperative day. The incidence of oculocardiac reflex, postoperative nausea and vomiting, corneal ulcers, patient satisfaction (numerically from 0 to 10) and the degree of residual ocular deviation were also assessed.

Results: The operation was performed successfully in all patients. Average pain intensity was 1.40 ± 1.73 during anesthesia implementation, 4.20 ± 2.57 during the surgical procedure, 2.50 ± 2.54 30 min after surgery, and 3.55 ± 2.89 during the first postoperative day. Oculocardiac reflex was observed in seven patients (35%), postoperative nausea and vomiting in four (20%), and corneal ulcer in four (20%). The patient satisfaction was 9.53 ± 2.51 . More than two-thirds (70%) of patients had a residual ocular deviation less than 10 prism diopters.

Conclusions: Contact topical anesthesia is a safe and effective alternative for strabismus surgery in adult patients. Contact topical anesthesia provides adequate pain control, lower incidence of postoperative nausea and vomiting and oculocardiac reflex, and optimal setting of ocular alignment.

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PALABRAS CLAVE

Estrabismo;
Anestesia local;
Procedimientos
quirúrgicos
ambulatorios;
Dolor posoperatorio

Anestesia tópica de contacto para cirugía de estrabismo**Resumen**

Objetivo: Analizar la eficacia y utilidad de la anestesia tópica de contacto en cirugía de estrabismo en pacientes adultos.

Material y método: Estudio prospectivo de 20 pacientes intervenidos de estrabismo utilizando anestesia tópica de contacto más sedación con remifentanilo. Mediante la escala numérica del dolor se registró la intensidad de este en el momento de la aplicación de la anestesia, durante la intervención quirúrgica, a los 30 min y durante el primer día posoperatorio. Se valoró la aparición de reflejo oculocardíaco durante la intervención, la incidencia de náuseas y vómitos posoperatorios, la presencia de úlceras corneales, la satisfacción de los pacientes de forma numérica del 0 al 10, y el grado de desviación ocular residual.

Resultados: La intervención quirúrgica se realizó de forma satisfactoria en todos los pacientes. La intensidad del dolor fue de $1,40 \pm 1,73$ en el momento de la aplicación de la anestesia; $4,20 \pm 2,57$ durante el desarrollo de la intervención; $2,50 \pm 2,54$ a los 30 min, y $3,55 \pm 2,89$ durante el primer día posoperatorio. Se observó aparición de reflejo oculocardíaco en 7 pacientes (35%), náuseas y vómitos posoperatorios en 4 (20%), y úlcera corneal en 4 (20%). La satisfacción de los pacientes alcanzó un valor promedio de $9,53 \pm 2,51$. El 70% de los pacientes presentaban una desviación ocular residual menor a 10 dioptrías prismáticas.

Conclusiones: La anestesia tópica de contacto es una alternativa segura y eficaz para la cirugía del estrabismo en pacientes adultos. Permite un adecuado control del dolor, ofrece una baja incidencia de reflejo oculocardíaco y náuseas y vómitos posoperatorios, y proporciona un ajuste óptimo de la alineación ocular.

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Introduction

The development of locoregional anesthesia in eye surgery has reduced anesthetic risk and postoperative recovery time, both of which are fundamental factors to be taken into account in day surgery. Although strabismus surgery is usually performed under general anesthesia, there is a growing tendency in hospitals to use locoregional techniques in adult patients.

A variety of locoregional anesthesia techniques have been used in strabismus surgery. Contact topical anesthesia (CTA) is a non-invasive technique with very few adverse effects that has been used in a wide variety of ocular surgery procedures.¹⁻⁴ In strabismus surgery in adult patients, CTA has been shown to be a safe, effective and pain-free alternative to general anesthesia.^{3,4}

We present the results of an observational study of 20 adult patients undergoing strabismus surgery with CTA and conscious sedation with remifentanyl. The parameters measured were anesthetic effectiveness and other benefits associated with the technique, such as better management of pain and postoperative nausea and vomiting (PONV), suppression of the oculocardiac reflex (OCR), and post-surgery ocular alignment.

Materials and methods

Prospective study of a cohort of 20 adult patients diagnosed with strabismus and undergoing lateral rectus recession

and/or resection using CTA in the day surgery unit of our hospital. The study was approved by the Clinical Research Ethics Committee. All adult patients scheduled for strabismus surgery in our hospital between 2012 and 2013 that agreed to take part in the study were included. Exclusion criteria were: foreseeable technical difficulties due to prior ocular surgery or other associated ocular problems, history of SAHS, psychiatric disorders (dementia, anxiety disorder), and sensitivity to any of the study drugs.

Following instillation of topical anesthetic drops containing 0.4% oxybuprocaine plus 0.1% tetracaine (Colircusi Anestésico Doble®, Laboratorio Alcon Cusi, S. A., Barcelona, Spain), we proceeded to apply the CTA. A 2 cm x 2 cm pad of Spongostan® (Johnson & Johnson Medical Limited, Gargrave, Skipton, UK) was impregnated with a 1:1 solution of 2% lidocaine and 0.75% bupivacaine. Using forceps, the sponge was placed in the conjunctival fornix on the side of the muscles to be treated. Patients were then asked to close their eyes for 5 min to maximize penetration of the anesthetic (Fig. 1). All patients were sedated with IV midazolam 0.2 mg/kg^{-1} and continuous IV remifentanyl infusion ($0.02\text{--}0.1 \mu\text{g/kg}^{-1}/\text{min}^{-1}$) to maintain a sedation level of 2–3 on the Ramsay Sedation Scale. During the procedure, patients were monitored using pulse oximetry, ECG, non-invasive arterial pressure, and bispectral index.

All surgeries were performed by the same surgeon, and involved complete dissection of one of the lateral and/or medial rectus muscles and suture to the sclera (recession), or to the same muscle (resection). In all cases, size 6/0 absorbable Vycryl® sutures were used (Ethicon Inc., Somerville, NJ, USA).

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