Preliminary Results of a Randomized, Prospective and Non-Inferiority Study Comparing Standard Vs. Lacrimal Dilator Facilitated Sub-Tenon's Block

Oya Yalcin Cok¹, Muge Coban Karatas,² Chandra M Kumar³

¹Dept of Anesthesiology & ²Dept of Ophthalmology, Baskent University, School of Medicine, Adana, Turkey,
³Khoo Teck Puat Hospital, Singapore

Background and aims

Sub-Tenon's block (STB) is increasingly used for cataract surgery to reduce risk of complications related to needle blocks.¹ The technique involves making a conjunctival incision with blunt forceps and scissors followed by insertion of a blunt cannula into the sub-Tenon's space. Recently, a sub-Tenon's technique has been described in which a small aperture in conjunctiva is made with a lacrimal dilator.² This technique accelerates block performance, minimize local trauma, improve surgical field and avoid surgical incision of conjunctiva.³

We report preliminary results of a randomized, prospective, non-inferiority study comparing standard vs. lacrimal dilator-facilitated sub-Tenon's block.

Methods

- The patients undergoing elective cataract surgery enrolled into two groups to receive sub-Tenon's block
 - Group WS – standard sub-Tenon's dissected with Westcott scissors
 - Group LD – entry portal obtained with a lacrimal dilator (Fig 1)
- A 19G, 2.5cm long sub-Tenon's curved blunt cannula was used in both groups
- All patients received 3 mL 2% lidocaine and no sedatives
- Data collection included:
 - Demography
 - duration of the procedure
 - intraoperative chemosis
 - analgesia (Visual Analogue Scale 1-10).
 - akinesia (4 primary gazes)
 - the quadrant/s of subconjunctival haemorrhage on the first postoperative day
- The latter four parameters were assessed by a 5-score scale according to quadrants of the globe

Fig1. Lacrimal dilator-facilitated entry during STB

Results

- Patients in both groups were comparable for demographic data, procedure duration, analgesia and akinesia ($p > 0.05$).
- The incidence of chemosis and subconjunctival hemorrhage were significantly lower in Group LD ($n=15$) in comparison to Group WS ($n=26$) ($p=0.001$ and $p < 0.001$, respectively).

Fig2. Subconjunctival hemorrhage following STB in the same patient; with lacrimal dilator in the right eye (a) and with scissors in the left eye (b)

Conclusions

Incisionless sub-Tenon's block with lacrimal dilator is a practical and effective alternative to standard technique with reduced chemosis and subconjunctival hemorrhage

References:

1. Chua A, Chua MJ, Kumar CM. Punctal dilator facilitates insertion of blunt cannula during sub-Tenon's block. *Anaesth Intensive Care*. 2018;46(2):239-240
2. Palte HD, Gayer S. Novel technique for minimally invasive sub-Tenon's anesthesia. *Reg Anesth Pain Med*. 2019;44(1):131-132