Sub-Tenon’s infiltration using bupivacaine 0.5% decreases acute postoperative pain and opioid requirement after posterior segment surgery

Editor—Sub-Tenon’s infiltration is recognized as a safe regional anaesthesia technique for phacoemulsification of the lens,\(^1\)\(^2\) and other ophthalmic procedures,\(^3\) but its analgesic effect has not been assessed in the postoperative period.

After approval by the local ethics committee, and written informed consent had been obtained from the patients, we performed a prospective randomized double-blind study to compare the opioid requirement when bupivacaine was given by the sub-Tenon’s route in posterior segment surgery. General anaesthesia was induced by propofol (1–2 mg kg\(^{-1}\)), remifentanil and atracurium and was maintained with isoflurane and remifentanil (15–25 μg kg\(^{-1}\) min\(^{-1}\)). Patients undergoing posterior segment surgery were chosen because the operation is more painful than phacoemulsification of the lens.\(^4\) One group (30 patients) received sub-Tenon’s infiltration with bupivacaine 0.5%, 3 ml by the surgeon before the end of surgery, and in the control group (30 patients) only analgesic drugs were used. A visual analogue scale (10–100) was used to assess pain. We calculated the median values of the visual analogue scale for each group and used the Mann–Whitney \(U\)-test to compare groups. We studied the patients’ request for analgesic drugs throughout the operative period (up to 24 h from leaving the recovery room). We used Fischer’s exact test to compare the groups. The mean (sd) age of the patients was 43 (14.1) yr (male 17, female 13) in the sub-Tenon’s infiltration group, and 46 (14.7) yr (male 16, female 14) in the control group. The mean duration of surgery was 90 (30) min in the sub-Tenon’s group and 88 (35) in the control group. No cardiac or neurological complications were seen. We did not observe any retinal ischaemia or ischaemic optic neuropathy.

From the recovery room until 3 h after operation, the pain score was lower in the group with sub-Tenon’s infiltration.
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(P=0.000001). In the control group, all patients required analgesic drugs and some patients requested morphine as their pain score was 70. In the 3–6 h period, the pain score was significantly lower in the bupivacaine group (P=0.025). In the 6–24 h period, the difference was not significant. Consumption of analgesic drugs was considered for the 24 h from leaving the recovery room. Consumption of acetaminophen, ketoprofen and morphine was lower in the group receiving sub-Tenon’s infiltration (P=0.0009).

Sub-Tenon’s infiltration with bupivacaine 0.5%, 3 ml offers excellent postoperative analgesia for up to 6 h and is more effective than other drugs. Furthermore, it is reliable and safe.

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