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The applications of sub-Tenon's anaesthesia for canine ophthalmic surgery

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Abstract

Sub-Tenon's anaesthesia is an indispensable anaesthetic technique in human ophthalmic surgery. It produces highly effective regional anaesthesia and has a significantly lower complication rate than the previously used peribulbar and retrobulbar injections. Although this technique has potential application to veterinary ophthalmology it has not yet been reported in clinical cases. This thesis reviews the literature that references local anaesthesia for ocular surgery in human and veterinary ophthalmology. A sub-Tenon's block technique that was specifically developed for use in dogs is also described. This technique is assessed with a prospective controlled clinical study testing this technique across a variety of ocular surgeries including enucleation, intrascleral prosthesis, keratectomy with a third eyelid flap and cataract surgery. The effect of sub-Tenon's anaesthesia on specific parameters was recorded and compared to the controls such as; globe position and rotation, pupillary dilation, general anaesthetic monitoring parameters, intraocular pressure, vitreal expansion and post-operative pain scores. Analysis of these parameters has indicated that sub-Tenon's anaesthesia was an effective option for controlling post-operative pain when used in conjunction with systemic analgesics and was an excellent alternative to systemic neuromuscular blockade for canine cataract surgery.

Abbreviations

STB - Sub-Tenon's block

NMB - Neuromuscular blockade

IOP - Intraocular pressure

SK - Superficial keratectomy surgery

ISP - Intrascleral prosthesis surgery

ETCO₂ - End tidal carbon dioxide

Iso% - Isoflurane vapouriser setting

HR – Heart rate

RR – Respiratory rate

BP_{sys} – Systolic blood pressure

BP_{mean} – Mean blood pressure

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Approval was provided by the Massey University Ethics Committee and the clinical study was carried out accordingly.

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