Letter To The Editor: Iop Effect Of Succinylcholine And Retrobulbar Block

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Citation

Abstract

Several investigators have showed that the rise in IOP after retrobulbar injection and succinylcholine injection is followed by decline in IOP. Comparing those research data show the similarity of the pattern of IOP changes after retrobulbar block and succinylcholine injection, which may support the argument that succinylcholine can be used in open globes.

1. Gjotterberg (1) showed that IOP increased 1 min, and was maximal 10 mmHg at 1 min after retrobulbar block. IOP returned to the baseline 5 min after retrobulbar injection, below the baseline 10 min after injection. The IOP reduced without oculopression.

2. These results are consistent with those reported by Jay and Palay, who studied the time course of intralobular pressure after retrobulbar injection with intralobular pressure reducer. Jay (2) showed that the mean intralobular pressure increased 4.4 mmHg immediately after retrobulbar injection, with Honan intralobular pressure reducer intralobular pressure decreased 6.2 mmHg 7 min after retrobulbar injection. Palay (3) showed that the average increase in IOP after retrobulbar block was 6.2 mmHg. IOP reached the peck immediately after retrobulbar injection. IOP returned to baseline 2.5 min after injection, below the baseline 10 min after injection.

3. Pandey (4) studied the time course of intralobular hypertension produced by suxamethonium. This classic study showed that IOP increased 1 min, and was maximal 8 mmHg at 2-4 min after suxamethonium injection. IOP returned to baseline 6 min after injection, and below the baseline 10 min after injection.

4. The intralobular pressure changes by succinylcholine were also supported by Cook and Kelly. Cook (5) found that low dose and high dose succinylcholine caused increase in IOP-5 min after injection, reached peak 1-2 min after injection, and IOP returned to baseline in 10 min.

Kelly ($_6$) showed that IOP reached the peak 1.5 min after succinylcholine injection, IOP returned to the baseline 5 min after injection.

These studies showed that the patterns of IOP changes between retrobulbar block and succinylcholine are almost identical. Retrobulbar anesthesia has been used for "bad eye" all the time. McGoldrick ($_7$) showed that no direct attributable extrusion of intraocular contents secondary to admission of succinylcholine can be found in the literature. Therefore, succinylcholine can be used in open eye injury.

References

1. Gjotterberg M, and Ingemansson S: Effect of intralobular pressure of retrobulbar injection of xylocaine with and without adrenaline. Acta. Ophthalmol. 1977; 55:709-716
2. Jay WM, Carter H, Williams B, and Green K: Effect of applying the Honan intralobular pressure reducer before cataract surgery. Am. J. Ophthalmol. 1985; 100:523-527
3. Paly D, and Stulting RD: The effect of external ocular compression on intralobular pressure following retrobulbar anesthesia. Ophth. Surg. 1990; 21:503-507
4. Pandey K, Badola RP, and Kumar S: Time course of intralobular hypertension produced by suxamethonium. Br. J. Anesth. 1972; 44:191-195
5. Cook JH: The effect of suxamethonium. Anaesthesia 1981; 36:359-365
6. Kelly RE, Dinner M, Turner LS, Haik B, Abramson DH, and Daines P: Succinylcholine increases intralobular pressure in the human eye with the extraocular muscle detached. Anesthesiology 1993; 79:948-952
7. McGoldrick KE: The open globe: is an alternative to

succinylcholine necessary. J. Clin. Anesth. 1993; 5:1-4

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