

Anesthesia for Vitreous Surgery

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ABSTRACT

Vitreoretinal surgery has become a common part of ocular surgery performed in most eye units in Western world. The frequency of such surgery has increased dramatically over the later couple of decades. This has called for measures to reduce hospital stays and more proper use of theater time. Anesthesia is one of the factors that can contribute effectively towards the previous two factors in addition to reduced health hazards to patients. Local anesthesia has been on the rise in different surgical procedures including vitreoretinal surgery.

Keywords

Retinal, Vitreous, Anesthesia, Local, Topical.

Introduction

Vitreoretinal surgery has taken a great turn in the last couple of decades. Scleral buckling used to be the main surgical interference for rhegmatogenous retinal detachment. Pneumatic retinopexy has been utilized by some institutions for the same condition. However, lately vitrectomy has been used more often for conditions that could have been treated with Scleral buckling or pneumatic retinopexy a few years back.

General anesthesia carries certain risks specially in elderly patients with complex medical history such as diabetes mellitus and hypertension. Moreover, diabetic eyes needing vitrectomy for proliferative disease can have associated renal disease which can also increase their risk from having an operation under general anesthesia. Diabetic vitrectomy is one of the common indication for the procedure. General anesthesia is generally recommended for younger patients [1]. However, local anesthesia is still an option for young adults provided good general sedation is provided [2].

Discussion

There is a general trend to use local anesthesia in different surgical interferences including heart and brain surgery. Local anesthesia has been used in most cases of anterior segment surgery for a long time with increased patient comfort and quick recovery postoperatively

[3]. Even for anterior segment surgery anesthesia has progressed to the extent of doing operations by the mere application of topical anesthetic drops or gel. This preserves the eye lid movements and negate the need to patch the eye after operation. However for posterior segment surgery many surgeon still feel inclined to proceed under general anesthesia. The decision whether to employ general or local anesthesia for vitrectomy depends on factors like patient age and general health, anticipated length and difficulty of the operation and to a large extent on surgeon's preference [4].

Nowadays vitrectomy is being performed for a wide array of retinal diseases as well as traumatic conditions. Diseases such as diabetic eye disease including tractional retinal detachment, epiretinal membranes, macular holes as well as traumatic conditions leading to RRD. The more common use of this treatment modality calls for less time patients spent in hospital, better use of theater time and faster post-operative recovery. Those criteria can be accomplished by doing the operation under local anesthesia instead.

For local anesthesia to be ideal it should remain effective for the entire duration of the operation, make the surgeon comfortable enough to perform efficiently, leave the patient comfortable during and immediately after the procedure, not painful while being administered and in the meantime should be risk free.

Vitrectomy under local anesthesia was reported to have lower cost. This seems as a reasonable conclusion since operating under local

anesthesia require less hospital stay as well visits before and after procedure. Gilbert et al [5] found the cost of vitrectomy operations done under local anesthesia reduced by almost the half of what could have been if done under general anesthesia.

Subtenon's cannula as well as sharp needle retrobulbar or peribulbar anesthesia are used for local anesthesia prior to vitrectomy [6]. A mixture of bupivacaine and lidocaine is commonly used to provide fast but lasting effect.

Just like the move toward topical anesthesia in anterior segment surgery helped patients avoid the risks involved with local anesthesia, there has been a move towards this modality in vitreous surgery as well. Topical anesthesia is helpful when no scleral buckling is likely to be required during the procedure. This move towards this kind of anesthesia was helped as well by the introduction of small gauge vitrectomy. Mahajan et al [7] found that topical anesthesia was safe for small gauge vitrectomy. Although sounds promising, limitations to the use of topical anesthesia in vitrectomy include surgeon's experience and level of case difficulty [8].

Gupta et al [9] described a technique where they used lignocaine 2% topically augmented by intracameral preservative free lignocaine irrigation. They advocated the intracameral irrigation provided anesthesia of the ciliary body internally.

Conclusion

With the recent advancements of vitreous surgery and the need for more operations of this kind, reduction of time needed during the operation and the less likely need for scleral buckling in many cases, local anesthesia is becoming more commonly used.

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