Brief Communication

Seeing Beyond: Why Ophthalmic Anaesthesia is the Next Frontier for Aspiring Anaesthetists?

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Introduction

Ophthalmic anaesthesia, often referred to as "standby anaesthesia" in its earlier days, has undergone significant evolution, transforming into a specialized field within anaesthesiology that plays a crucial role in ophthalmic surgeries. Its importance is underscored by the need to manage patients across a spectrum of ages and with a variety of underlying comorbidities. As the demand for eye surgeries grows, particularly among the aging population, ophthalmic anaesthesia has become a vital area requiring not only precision and patience but also specialized skills.

Today, ophthalmic anaesthesiologist is equipped to manage a variety of patient populations, including compromised geriatric patients undergoing cataract surgery, premature neonates for retinopathy of prematurity and syndromic children scheduled for procedures like retinoblastoma treatment or pediatric cataracts. This specialty offers an exciting array of challenges and opportunities, making the practice of ophthalmic anaesthesia both rewarding and dynamic.

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History of Ophthalmic Anaesthesia

It has been 100 years since Karl Koller, a young physician from Vienna, successfully anaesthetized a frog's eye using a cocaine solution.[1] This groundbreaking experiment marked the beginning of a transformative era in ophthalmic surgery. In 1884, Herman Knapp first introduced the retrobulbar blockade, though it did not gain widespread acceptance at the time. Years later, in 1936, Atkinson introduced a retrobulbar technique that gained popularity but was eventually phased out due to its high complication rates. As a result, many practitioners have transitioned to newer techniques, such as peribulbar blockade and sub-Tenon block. These alternatives offer comparable levels of anesthesia and akinesia while theoretically presenting a lower risk of severe complications.[2,3]

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The Ophthalmic Anesthesia Society convened its inaugural scientific meeting in November 1987, marking a pivotal moment in the field. Today, ophthalmic anaesthesia has evolved into a thriving specialty, supported by both national and international societies. Platforms like the British Ophthalmic Anaesthesia Society (BOAS) work in collaboration with the European Society of Ophthalmic Anaesthesia (ESOA) and the World Congress of Ophthalmic Anaesthesia (WCOA) to advance the field of ophthalmic anesthesia. Also, at the National level, Association of Indian Ophthalmic Anaesthesiologists (AIOA) was inaugurated in the year 2020. These organizations focus on advancing academic research, embracing innovative ideas, and exploring cutting-edge trends, demonstrating that this field offers far more than is often anticipated.

Renowned anaesthesiologists from across the country actively participate in the annual meeting, contributing to raising awareness, sharing expertise, and introducing innovative trends in the field. With an increasing number of anaesthesiologists joining these societies, the specialty continues to grow stronger and more impactful.

Expanding scope and opportunities in Ophthalmic Anaesthesia

Ophthalmic anaesthesia is rapidly growing as a specialty, driven by the increasing demand for eye surgeries. While cataract procedures form a significant portion of the workload, the scope of this field extends far beyond routine surgeries. In earlier times, the role of an anaesthetist in ophthalmic surgeries was often limited to being on standby for cataract procedures, intervening only when needed. However, with advancements in ophthalmic surgery, the role of anaesthesia has evolved into a highly specialized field. The development of subspecialties within ophthalmology has further demanded the need for anesthetists with focused expertise to ensure optimal outcomes.

This specialty allows anaesthetists to practice a unique combination of anesthesia. Ophthalmic anaesthesiologists are increasingly taking on the responsibility of performing regional orbital blocks, a practice that was previously the domain of surgeons. Techniques such as peribulbar and sub-Tenon's blocks are the most common regional anaesthesia methods adopted by ophthalmic anaesthesiologists. Each technique offers distinct advantages and poses certain challenges. The choice of technique should be carefully tailored to the patient's individual needs, the specific requirements of the eye surgery, and the expertise and preferences of the surgical and anaesthetic teams. A thorough understanding of orbital anatomy and proper training are essential for safe and effective administration of ophthalmic regional anaesthesia.[4]

Elderly patients with complex medical conditions undergoing day-care ophthalmic procedures have become a common sight today. This includes surgeries under general anaesthesia and Monitored Anaesthesia Care (MAC) for all age groups. This remarkable shift is largely due to advancements in anaesthesia techniques and the availability of newer, safer drugs, enabling anaesthesia to be delivered more effectively and safely for geriatric patients[5].

MAC is a specialized anaesthesia service designed for procedures performed under local anaesthesia, combined with carefully controlled sedation and pain relief. The sedation is carefully adjusted to maintain the patient's protective airway reflexes, ensuring both safety and comfort. However, providing MAC requires the anaesthesiologist to have the expertise to manage the airway or escalate to general anaesthesia if needed[6]. This makes MAC a highly specialized service, led by anaesthesiologists with the training to identify early red flags and act promptly to address them during the procedure.

The diversity of cases in ophthalmic anaesthesia is truly unparalleled. Anaesthetists encounter complex scenarios, such as managing premature neonates undergoing retinal surgeries or caring for syndromic children with eye diseases, highlighting the critical importance of pediatric anesthesia expertise as well[7]. Additionally, challenging conditions like Stevens-Johnson syndrome, along with obese patients, obstructive sleep apnea (OSA), chronic obstructive pulmonary disease (COPD), cardiac disease, or are difficult to position, demand acute preparedness to manage severe perioperative complications. The demanding nature of ophthalmic anaesthesia ensures that every day is different and exciting. From securing difficult intravenous access to managing potential complications such as Local Anaesthetic Systemic Toxicity (LAST) and brainstem anaesthesia, ophthalmic anaesthetists must showcase exceptional skill and flexibility. As most ophthalmic surgeries are ambulatory, requiring anesthetists to adopt and implement Enhanced Recovery After Surgery (ERAS) protocols, ensuring smoother recovery and better patient experiences.

Newer trends and innovations in Ophthalmic Anaesthesia

Advances in Technology: Recent advancements such as ultrasound-guided ophthalmic blocks offer potential benefits compared to traditional blind techniques. They enable real-time visualization of ocular structures, needle placement, and the distribution of local anaesthetic, potentially minimizing complications such as globe perforation, intramuscular injection, and optic nerve injury.[8]

Enhanced Recovery Protocols (ERAS): Ambulatory surgery centers are using patient-focused approaches to improve care and reduce costs after complex procedures.[9] ERAS protocols help achieve these goals by shortening hospital stays, cutting expenses, increasing patient satisfaction, and improving clinical practices.

Safer Anaesthetic Agents: The introduction of low-dose local anaesthetics and using the minimum effective volume (MEV) of local anesthetic helps minimize unnecessary doses, maintain stable intraocular pressure, and provide optimal conditions for ophthalmic surgery[10].

Balancing benefits with limitations in Ophthalmic anaesthesia

Ophthalmic anaesthesia might not be the first specialty that comes to mind when you think about anaesthesiology, but it's one that offers a unique blend of precision, teamwork, and a chance to make a real difference in patient care.

That said, like any choice, it comes with its own set of pros and cons, which are important to weigh carefully.

The Upsides

Choosing ophthalmic anaesthesia offers several advantages. It allows anaesthesiologists to hone skills in delivering safe and efficient care in high-stakes, often minimally invasive, environments. The field emphasizes mastering peribulbar, retrobulbar, and other regional blocks that demand precision and anatomical expertise. For anaesthesiologists who value work-life balance, ophthalmic anaesthesia often involves predictable schedules with minimal emergencies, providing greater flexibility compared to other specialties. The field is also evolving rapidly, with new techniques and technologies constantly being introduced, which keeps things interesting and ensures you're always learning.

The Trade-Offs

But let's be real—focusing solely on ophthalmic anesthesia has its downsides. Over time, one might lose touch with broader skills like non-ophthalmic regional blocks or handling critical care situations, especially if not exposed to them regularly. These are core aspects of anaesthesiology, and letting them fade could limit your versatility if you ever want to pivot back to general practice.

Career opportunities can also be a bit niche. While there's growing demand in specialized centers, this might not be the case everywhere. It's something to think about, especially if you're planning to work in areas where ophthalmic care isn't as well-established.

The Bigger picture

Anaesthesia is far more than airway management or regional blocks—it's about holistic perioperative care, patient safety, and optimizing surgical outcomes. Aspiring ophthalmic anaesthetists must strive to integrate these principles into their specialized practice. They must also remain connected with the broader anaesthetic community to keep their skills sharp and versatile, ensuring they can adapt to various clinical scenarios.

The future

As the demand for ophthalmic surgeries grows, so too will the need for skilled anaesthesiologists dedicated to this field. The increasing prevalence of aging populations worldwide ensures a steady stream of ophthalmic cases, creating sustainable career opportunities. Institutions specializing in ophthalmic care are likely to invest more in building robust anaesthetic teams, further emphasizing the importance of this specialty.

Conclusion

Ophthalmic anaesthesia is a promising and rewarding career path for anaesthesiologists who seek specialization. However, it requires thoughtful consideration of its pros and cons. Aspiring anaesthetists must stay committed to continual learning and adapt to evolving practices to ensure their skills remain relevant and their career opportunities abundant.

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Conflicts of interest

There are no conflicts of interest.

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