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A call to action - Why European anaesthesiologists and ophthalmic surgeons should join efforts in a common society

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What do anaesthesiologists do when they encounter interesting cases, want to develop new techniques to better serve their patients, or just want to learn and discuss? They read and publish in journals suiting their sub-specialty and attend congresses and courses where their special problems are addressed. But if you happen to be engaged in ophthalmic anaesthesia (OA) you may feel a little lost in continental Europe, because there is no society and no journal. Additionally, it is rare for OA-topics to find their way to the podium of large anaesthesia or ophthalmology congresses. This is surprising when you consider the huge number of eye operations performed annually in Europe and across the globe.

The situation is rather better in some other parts of the globe. The original Ophthalmic Anesthesia Society (USA) had its first scientific meeting in 1987 and meets annually in Chicago [1]. The British Ophthalmic Anaesthesia Society [2] has brought eye-surgeons and anaesthesiologists together to engage in lively discussion for over 20 years. As a consequence you'll find very detailed guidelines [2,3] and a living culture of patient safety in ophthalmic surgery in the UK. Our Indian colleagues constituted OFISA, the Ophthalmic Forum of Indian Society of Anaesthesiologists [4], where anaesthesiologists and surgeons from the subcontinent's impressive eye-hospitals convene every second year and hold congress with presentations and practical workshops. The same colleagues contribute to a journal/newsletter in India, and in Great Britain [2,4].

Unfortunately, this does not hold true for European eye-hospitals. There is little connection amongst different institutions and very little opportunity for open discourse. Some may think that "'it's only eye-surgery, right? Drops or GA, so why bother!" The attitude encountered in many European institutions is that the ophthalmic surgeon knows best and the anaesthesiologist does as demanded. One wonders whether this relationship between the two parties isn't

1) outdated,
2) hardly ideal for patient care in general, and
3) not fit for the demands of eye surgery in the coming years.

Let me examine where a common, lively discussion between surgeon and anaesthesiologist may profit ophthalmic patients in the fields of

1) Ophthalmic regional anaesthesia (ORA)
2) Care of old and very-old patients
3) On a health-politic level

1. Ophthalmic regional anaesthesia

Although retrobulbar block (RBB) is still in wide use in Europe and the Americas, it very likely will not be here for all eternity. This technique has the inherent risk of patient harm due to the triad of bulbar perforation, retrobulbar haemorrhage and brainstem anaesthesia [4–7]. It may be argued that ever so often a false presumption of near-perfect-sphericity of the eyeball lies at the root of bulbar perforation [15]. Compared to the use of RBB, problems are rare but often grave: patients may be permanently blinded or even die. Fatal or near-fatal cases hardly ever get published in the medical literature-a fact that adds to the misperception of the risks involved [8]. A survey in the United Kingdom, done in 1996 when sharp-needle blocks were the 'standard' technique, found that 2% of ophthalmologists had experienced a patient death as a result of LA complications [9]. Another, rarely mentioned complication is post-operative diplopia which is known to occur with an even greater incidence of 0.5–1.0% after sharp needle techniques [16]. With case-loads in teaching hospitals across Europe dwindling, fewer young anaesthesiologists are being trained in OA or even want to learn RBB block [17,18]. Who can blame them? Chances are very likely that they will severely harm eyes during their slow learning curve. In the UK, where sharp-needle blocks (peri- and retrobulbar)

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are being increasingly perceived as dangerous and frowned upon, the National Institute for Health and Care Excellence (NICE) has recently stated that, for cataract surgery, the default LA should be either topical, topical/intracameral or a blunt-cannula sub-Tenon's anaesthesia (STA) [14]. NICE goes on to state that if the patient is unsuitable for topical or STA then peribulbar block may be considered, but 'Do not offer retrobulbar anaesthesia for people having cataract surgery'.

Retrobulbar anaesthesia survives due to its traditional use in continental Europe based on three die-hard misconceptions. The first comes from ophthalmologists and it states that "Any potential harm caused through bulbar perforation can easily be fixed by a capable surgeon!". Well no! In the first place, only half of the perforations come to the immediate attention of the one who caused them [10,11] and a needle laceration involving sclera, choroid and retina can easily cause permanent blindness, even with modern vitrectomy techniques [12,13]. Some groups aim at improving security of sharp-needle blocks through ultrasound-guidance controlling for abnormal anatomy, especially staphylomata, before administering the block, or applying the regional anaesthesia under continuous guidance of ultrasound imaging. Whilst imaging of the needle-tip proves difficult, there are merits in better evaluation of ophthalmic anatomy [19,20].

The next myth, one cherished by anaesthesiologists, states that "Any anaesthesiologist can deal with brainstem-anaesthesia! All it takes is a laryngyeal tube!" [8]. If patients would just smoothly stop breathing and become unconscious, brainstem-anaesthesia would really be an easy fix. But on top of sudden loss of consciousness and apnea, grand-mal seizure or asystole can complicate things. Coping successfully with only two of these four "never-events" while removing a surgical microscope and tearing off drapes from the patient's face can prove very demanding!

The final myth is the central European credo; "We've always done it this way and we are fine with it!" That may have been the case in the past, but the (appropriate) Patient Safety agenda, not to mention the threat of litigation, means that one of the most important roles of the anaesthesiologist is being an active advocate for our patients safety. It takes only one tragic blinding or near-death to occur and the credo simply isn't true any longer. Just imagine the pilot flying you and your family to your holiday destination even considering to apply one of these three mind-sets!

Literature shows that other blocks (sub-Tenon's and sub-conjunctival) carry a much better safety profile, yet old habits die hard [10]. Very hard in a continent that defines itself through many cultural old habits. But we can change! Learning sub-Tenon anaesthesia is not difficult, lends itself well to being taught in simulation [17,21] and with training, the safety of ophthalmic regional anaesthesia can be significantly improved. We feel that the time has come for colleagues elsewhere to replace the needle with the STB-cannula, for those patients who need a "block" local anaesthesia..

2. Care of old and very-old patients

As for the care of octogenarians or older, obviously, all our patients are getting older, more frail, more prone to dementia and more likely to suffer post-operative delirium (POD) and post-operative cognitive dysfunction [22]. With procedures aimed at improvement of sight in the old and very old (cataract, glaucoma-surgery, vitreo-retinal surgery) the benefit for cognitive health in the elderly is obvious. But do our current ways of providing sedation and GA not counter-act these benefits? Anaesthesiologists only slowly start taking patients' cognitive factors into consideration of what adds-up to be a good narcosis [25,29]. One of the consequences is that dementia-patients in ophthalmic surgery are especially likely to receive GA. Given that head-movements or coughing during retinal or "open-sky" procedures can have catastrophic consequences, the surgeon may request a GA that is "very deep" [27,28]. Difficult emergence and post-operative delirium may come as a direct result of this, creating a vicious circle in which cognitive decline may be hastened through anaesthesia [29]. Whilst major surgery in elderly patients - cardiac or non-cardiac-makes it very difficult to separate the influences of either drugs or peri-surgical inflammation on old brains, ophthalmic anaesthesiologists may be well positioned to study the interactions of drugs and old brains in its purest form.

In the light of the medical literature pertaining to dementia, delirium, and cognitive dysfunction, ophthalmic anaesthesia offers a ripe field of experimentation with trends in current anaesthesiology. One example is the use of dexmedethomidine-sedation, combined to regional anaesthesia [26]. This combination helps to forego GA on a large scale. Opioid-free or opioid-sparing GA combined with locoregional anaesthesia is practiced daily in our clinic with good results. Tuning our hypnotic drugs according to perioperative frontal EEG helps us to stay clear of over-sedation [27,28] while providing good analgesia through STA. Some of our French and Belgian colleagues venture out to have medical hypnosis as the only sedative in ophthalmic procedures and they report good results [23,24]. In the light of current neuro-scientific research drawing EEG-patterns and fMRI-connectivity patterns to the fore, this is not just some esoteric hobby anymore [30].

3. Health-policy-aspect

There's many a way to improve the peri-procedural situation of ophthalmic patients in Europe and this will demand a unified effort of both surgeons and anaesthesiologists. More ideas, more exchange and more debate are urgently needed. Especially at a time when, in many European countries, politics and insurance-policies are making efforts to sever the ties between the two specialities who share the immediate responsibility for old and frail ophthalmic patients. It's time we team up right and prove to politics, the public and our patients that well-functioning surgical-anaesthesiological teams provide innovative care for the old and frail in ophthalmology!

If you are interested in supporting and collaborating with a European society of ophthalmic anaesthesia, please contact: friedrich.lersch@insel.ch. For more information, check out our homepage with recorded lectures, RA-instruction movies etc. www.roah.ch.

Last but not least, do join us in London on November 28th and 29th 2018 for the scientific BOAS meeting, or December 5th & 6th 2019 in Engelberg, Switzerland.

Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.tacc.2018.09.001.

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