



EDITORIAL

Thoughts On Welcoming A New Journal

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In today's world of medicine, the birth of a new journal is not necessarily good news: the field is crowded, and the relatively new phenomenon where authors can have their work published by paying for the privilege, even if it's claimed that a peer-review process takes place, is a dubious proposition.

The birth of the journal that the reader holds in his hands, however, belongs to a different category. First, it is not one where money can buy access. Second, the peer-review process is a rigorous one, with peers filtering out manuscripts not deemed worthy of publication. Third, one of the main topics this journal focuses on is a topic often neglected by established journals: Trauma.

This immediately brings a question: Why is it that many of the journals with a high impact factor tend to publish relatively few trauma-related articles?

The answer is two-fold. One, the incidence of eye injuries is declining. Two, trauma is a field where truly scientific studies are not conducted, therefore the validity of a manuscript, including that of case reports, can be questioned. Let's look at these arguments in more detail.

The incidence of eye injuries is indeed declining, but this is occurring mostly in the so-called developed world. In many parts of globe, though, where violence still rules, this is certainly not the case. Terrorists attacks, in which the perpetrator uses an explosive device, result in nu-

merous cases of devastating eye injury due to high-impact flying particles, not the least of which are pellets and nails, packed into the device with the very intent of causing such injuries. And let's not forget that even a country with an exceptional cultural heritage, a country of laws and sophisticated democratic rules such as France, recently saw at least 21 eyes injured by police-fired rubber bullets during the "Yellow Vests" riots.

The second claim, questioning the scientific value of trauma papers, deserves a more thorough discussion. It is true that "level-one evidence-based" studies are lacking in the field of ocular traumatology. One cannot design such a study: Not in the past, not in the future. So many variables need to be included in a study design that the number of cases required to be included to arrive at meaningful statistical conclusions is prohibitive. Furthermore, an eye-injury study cannot be randomized, much less be prospective, and one would struggle to find an appropriate control group.

The real question, however, is not this. The real question is whether a study that does not measure up to providing level-one evidence is therefore indeed an inferior one, unworthy for publication, unworthy for practicing ophthalmologists to consider applying in their daily clinical practice. And this question is fairly easy to answer.

What would a highly scientific journal's editor-in-chief, who has the final say whether a manuscript is accept-

ed or rejected, do if he develops a cataract? Surely, he'd choose to undergo an operation with cataract removal and almost certainly an intraocular-lens implantation so that his vision is restored.

This is where a double standard surfaces. The very person who rejects a manuscript in ocular traumatology because it is "only a cases series" selects to accept surgery on his own body - a surgery whose value has never been statistically proven in a proper study. Level-one evidence does not exist to demonstrate that cataract removal improves vision; nor have we scientific proof that penetrating keratoplasty or the removal of a vitreous hemorrhage brings functional benefits.

How come, then, that surgeons throughout the world perform lens substitution, cornea replacement, vitreous-hemorrhage removal and that such surgeries are accepted as justified? The answer of course is shockingly simple. Because it is common sense and because empirical evidence proves that these surgeries bring incredible benefit to patients, improving their quality of life immeasurably. No level-one evidence study needed.

The same logic should apply to manuscripts dealing with eye injuries. It would indeed be highly desirable to conduct a study, as at least one was planned many years ago (but was not approved precisely because it would have not resulted in level-one evidence) to examine whether early intraocular reconstruction of the severely traumatized eye is more beneficial than the traditional approach ("wait 2 weeks").

While such a study would indeed be extremely useful, it is not going to be organized for the reasons mentioned above. The standard question the clinician always asks ("so what should I do when I see a patient with such-and-such a condition?") in the field of ocular traumatology is going to remain answered based on: common sense.

Let me discuss the question raised above, a critically important one: The timing of intraocular reconstruction. The prevailing current trend is to do a staged surgery: First, the wound is to be sutured (preferably, as soon as possible, rather than waiting until the next day when the facility opens its operating room and all the staff/personnel are available during "normal business hours"). Second, a period of 10-14 days follows, when, ideally, topical corticosteroid treatment is applied to reduce the inflammation and vascular engorgement (and thus the risk of a major intraoperative hemorrhage). Third, the

intraocular reconstruction is performed, which in most cases is vitreoretinal surgery.

The rationale for this management philosophy has its origins in animal experiments¹ from the early 1980s, even though the very same research group showed that the scarring process starts within days of the injury and leads to retinal detachment as early as 1 week postinjury². The prevailing clinical conclusion (which, again, prevails today) resulting from these fundamental, revolutionary studies was based on one finding: that spontaneous posterior vitreous detachment (PVD) occurs in a few weeks following the trauma,³ therefore the vitrectomy should be delayed until the posterior vitreous will have separated.

Since then, however, major additional discoveries took place. First, we have ample empirical experience that true spontaneous PVD is extremely rare in these eyes; what may occur is a posterior vitreoschisis or an anomalous PVD,⁴ which is itself a potential source of further complications. Second, we have a much better understanding of the scarring process (proliferative vitreoretinopathy, PVR) both in terms of experimental studies and clinical experience. Third, the instrumentation of vitreoretinal surgery has changed tremendously, dramatically reducing the risk of vitrectomy itself and improving the surgeon's capabilities and thus the eye's prognosis.

Common sense, then, based on these facts, argues in favor of an intraocular reconstruction that is performed before the PVR sets in. The literature is divided on this issue, it must be acknowledged, with some arguing in favor of early vitrectomy (in the first few days)⁵⁻⁶ and some finding no benefit in early intervention⁷.

This brings us to the two main points of this writing. First, again, no "absolute scientific evidence" will emerge in the field of ocular traumatology; the attending ophthalmologist should therefore make a thorough consideration of what option he should choose in general and in the particular case that is right in front of him. Second, and this is actually a benefit of not having a decisive study to influence his thinking (see below), he can act with a free mind, not robotically follow a "protocol". This second point again requires additional explaining.

How do physicians arrive at a clinical decision today? A superficial observer would say that such decisions are based on scientific evidence derived from published literature plus personal experience, which itself has many

components from teachings by past teachers to opinions of current peers. To understand why the superficial observer would be wrong in his conclusion, I suggest that the reader watches a movie: *Eye in the sky*. Among other things, this brilliant film shows today's reality in waging war. It is not the generals who make the ultimate decision but politicians and lawyers; they are in command, not the guy in uniform.

Sadly, the same is true in medicine. Who are the people and entities that have (often decisive) influence over a physician's decision-making process? Caveat: even if their significance is typically not consciously recognized by the physician, even if their impact remains hidden in the background, even if a physician tries hard to fight their influence in the interest of the patient, it is not possible for any physician to practice medicine totally neglecting the power of these forces. Below is a - far-from-complete - list of these entities.

Politicians. Remember the Avastin-Lucentis wars? There were countries where it was explicitly framed in law that Avastin cannot be used as an intraocular injection, despite mountains of (scientific) evidence that it is safe and effective? Or a rule that an already-ordered corneal graft cannot be implanted into a person other than the one for whom the cornea was ordered? Or the requirement that electronic medical records be used because they are safe (they are not), accessible by any physician who needs them (they are not), they contain all the necessary information (they do not), are uniformly available (they are not), easy to learn (hahaha), and inexpensive to develop (anything but).

Regulators - government agents who audit hospital records and physicians' charts. They never look at whether the treatment was proper and effective, only whether "proper", singularly required terminology for reimbursement was used (you can be criminally punished if reimbursement was received but that one particular word does not appear in the chart, even if the appropriate procedure was employed). Approval is granted for process, not for outcome. I have seen audited charts that were approved because all the administrative rules were followed - approved even though the physician committed a grave error (true malpractice). This is what matters, not the quality of the delivered care.

Administrators, hospital directors, financial advisors. The physician cannot simply order equipment or instrument, the order must undergo a thorough financial analysis

and then a tender follows and, typically, the least expensive offer wins. This is all understandable from a fiscal point of view to save money and avoid corruption - but it means that you often end up with something other than what in your judgement would have been the best option.

Insurance companies. For a certain condition, they pay for medicine A but not for medicine B: good luck if you reckon that a particular patient in that particular instance medicine B would work better. Or reimbursement for a combined cataract/vitreotomy procedure: you may want to remove the lens, but you do it on your own peril, nobody will pay for it.

Drug companies. If two drugs manufactured by the same company have the same efficacy but one is more expensive than the other, which do you think the drug company wants you to use? If you have no clue (is it possible?), just go back and look at the Avastin-Lucentis war again.

Device manufacturers. Why do you think the world has moved to disposable tools? Is it because the nondisposable ones could not be sterilized? Did you have more cases of endophthalmitis when your forceps went to sterilization after surgery rather than to the garbage bin? Of course not. But politicians were convinced (don't ask how) that it's better for society if medicine produces mountains of dangerous trash (with mountains of strict rules how to treat and destroy this trash) than if much of what is used in hospitals and offices get sterilized and reused.

Lawyers. No need to do much commenting here. I have been preaching the benefits of full-thickness corneal sutures for about two decades. I always receive lots of questions about this, raising reasonable doubts. These are absolutely justified and I have an answer for all of them, since I myself questioned the potential complications associated with full-thickness sutures before I started using them. But the first time I discussed the 100% deep corneal sutures in front of residents in the land of lawyers (the capital of the United States [population: 592,000] has more lawyers than the country of Japan [population: 127.8 million]), the only question I was asked was this: "Can we get sued if we use 100% deep sutures?". You go against what is considered mainstream ("standard of care") because you are convinced you are doing the right thing - but good luck with it if you get sued. In World War One, the soldier who lifted his head from the trenches got shot.

Peer pressure. This is a trap the profession digs for itself. Again, as a principle, evidence-based medicine is a great concept. However, even if every publication supplying such an evidence emphasizes that this is only a guideline and that you have to tailor its recommendations to the individual patient and not blindly oblige, in practice these studies come to serve as absolute rules. Physicians don't deviate from them because following the findings of "the study" spares them from the effort of actually thinking about an alternative - and it protects them in case of a lawsuit. Understandable? Yes. Ideal? Far from it. This is how the physician stops being a "doctor" and becomes a robot. You see a patient with diabetic macular edema, and you start injecting the eye with one type of drug, based on one of the numerous protocols. 36 injections per eyeball? Never mind; surely if they did not help, the 37th will. (Remember how Albert Einstein defined insanity: repeating the same thing and hoping for a different outcome.) This is why most surgeons downed their tools and switched to injections to treat eyes with endophthalmitis, instead of removing the pus from the vicinity of the retina, an option that would have a better chance of restoring vision.⁸

This all takes us back to traumatology. The beauty - and challenge - is that in this field the practicing ophthalmologist has a limited number of studies (and not purely scientific at that) to rely on when making decisions. The hope is that this Journal will bring a lot more useful information for all of us about how to best treat our injured patients, and inspire many colleagues to contribute to the Journal, sharing their experience with the whole world.

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