Tips on Irritations and Aspirations in Ophthalmology

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SUMMARY
This paper confronts philosophical issues concerning information gaps in the knowledge explosion, systems of medical education, and professional ethics.

To be asked by Professor Esente to give concluding remarks at the Second International Cataract Congress has been one of the greatest compliments of my life. A person looks ahead to that hypothetical day of fame or fortune when "my ship comes in" — perhaps without knowing when it bears port. Mine has docked.

I have elected to talk philosophically about information gaps in the knowledge explosion, about systems of medical education, and about professional ethics. In these areas I hope to touch upon both our problems and goals as we move toward the 21st century. Dr. Maumenee, the other toastmaster for the future, will deal with the scientific expectations of tomorrow. It is a thrill to be an anchorman with him.

In research, education, and practice the ophthalmologist has awesome opportunities for achievement. The pulse of our civilization signals the need for certain changes. The heart of humanity will always be the same. Our compulsory evolution will not be simple. In some ways we should discover fundamental principles, and in other ways we must adapt our lives and our work to the realities of — well, let me put it this way — to the realities of extracapsular surgery.

INFORMATION PLEASE
Photographs tell the history of a 70-year-old uneducated widower whose only eye developed severe bullous keratopathy a decade after cataract surgery had been performed (Figure 1A). He had waited several years with diminishing vision. Finally, when his sight reached perception of hand movements, he went for help and was referred from abroad for corneal transplant surgery. The other eye had been lost from absolute glaucoma; this remaining eye required a preliminary cyclocryotherapy for tension control. Penetrating keratoplasty was performed three months later. Vision became 20/30 with aphakic spectacle correction. The visual field was greatly constricted from longstanding glaucoma, as evidenced by the optic nervehead photographed through the crystal-clear transplant (Figure 1B). The joy of new sight was dramatic and immense. The surgeon revealed its genesis and shared in its celebration. Fortune was to change.

The man returned to his remote home and after six months grew tired of the use of medications (drops and pills) that did not seem to help his vision. He stopped them. He found no reason to visit his ophthalmologist 60 miles from his village. His vision began to fade, just as it had

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Readers of this paper who heard its presentation may find some differences. When rising to speak on the final day of the Congress, I was unable to find my notes. With failing memory and a time limit, I omitted several thoughts now included in the written proceedings.

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OPHTHALMIC SURGERY
slipped away gradually after the cataract surgery. A year passed. Now his sight was temporal light perception and pain joined his mental agony. He had been patient long enough. By the time he was sent back to me he had no light perception; the eye was phthisical (Figure 1C). Nothing could be done. He could not understand why I would not help him once again. Who had failed? The doctors. I.

It was terrible to watch that man's fate achieve realization. Shakespeare's Gloucester was blinded by the removal of his eyes. King Lear observed, "...yet you see how this world goes?" Gloucester replied, "I see it feelingly." The patient and the nobleman learned their lessons too late.

The medical achievements available even today are of little value if they cannot be sustained by whatever necessary information or education is their essential preservative. I suspect that our future management breakthroughs will depend increasingly on the understanding and cooperation of patients. These are difficult times for sorting out just what the layman should know and what should be de-emphasized in patient education. A little learning can result in dangerous misapprehension. In regions of the world where public education in medical matters is highly touted, it seems probable that the majority of citizens still believe:

- That cataracts must reach a certain stage of "growth" before surgery is indicated — if not mandatory.
- That when cataracts have been extracted "with the laser beam," the postoperative eye does not need spectacles or contact lenses.
- That the good or bad reputation of an ophthalmic surgeon is secured by the single testimony of one's neighbor who was or is his patient.

Those and other frustrating medieval malapropisms bring me to a sequential topic that relates closely to the need for more useful information.

OPINIONS

Patients (disguised people) are beginning to be assertive. They read newspapers, magazines, and other sources of sensational opinion intermixed with intriguing war stories. In the United States, more and more patients are requesting The Second Opinion. Let's face it — wanting another opinion is a healthy sign of participatory health care. The patient is thinking, not just responding passively. The testimony of a single neighbor is being challenged as less than absolute truth. The second opinion is partially an outgrowth of popularized fear of unnecessary surgery that is being addressed by our brethren in journalism. As I see it, ophthalmologists are being separated into two groups: Buccaneers and Splendid Representatives of the King (if you read the same materials as I). The essential truth is not captured by slogan or epithet, but we live in a world of capsule news. Buccaneers do unnecessary surgery and fail to provide proper postoperative care. Splendid Representatives of the King use Graefe knives and trim eyelashes. They have nicer uniforms.

*King Lear, Act IV, Scene VI.

I digress, and you must be confused as to what I intend saying. This: most ophthalmologists are neither of those caricatures. They do their best, struggle to stay abreast, and render careful judgments as to the needs of the individual patient. Second opinions are to be encouraged. At the completion of a thorough examination when cataract surgery is recommended, some patients will tell you they want to think it over — and that they want a second opinion.

It seems helpful to explain that you, the doctor, have listened to the history, performed the examination, and have come up with the recommendation for surgery. The second opinion is that of the patient! Knowing the explained pros and cons of cataract surgery and knowing the likelihood of visual success as prophesied by the doctor, the patient then enters into a process of developing informed consent (or informed delay) that actually constitutes full participation in the surgical decision-making. If the patient asks for another medical opinion, that would be the third opinion, and it would be sought from a second ophthalmologist. Try that line of discussion, and I believe your patients will be appreciative.

The intelligent preoperative patient deserves to know pertinent data from case series analysis. Prophecy should
be data-based. The indications and alternatives must no longer be obscured by some lingering mystique of medical empiricism. (Doctor knows best. Period.) The first step in correcting such outmoded practice is to collect the hard data needed for accurate doctor-patient discussions. The advent of the computer will bring to our society a new insistence upon ordered and appropriate information retrieval — and that will become more and more a part of the backbone of our explanations. I hope that ophthalmologists will be in the vanguard of medics who will standardize reporting of management results. This will help doctors get real facts, and it will therefore help their patients. It is currently almost impossible to compare results of one surgeon with those of another. Variables include case selection, eyes lost to follow-up, and arbitrary selection of milestones for the building of conclusions. In another paper presented at this Congress, I have made an admittedly primitive attempt to develop useful information for the patient in proposing that the mean percentage change is a category of visual acuity achievement that might be a beneficial component of a doctor’s preoperative explanation to his patient.

CLINICAL IMPRESSIONS

What we think or hope to be truth may be far from the mark. Clinical impressions are only the beginning of a testing that if incomplete can be grossly misleading. Take the germ of an idea: Fuchs’ dystrophy is not an intrinsic abnormality of the endothelial cells of the cornea but is the result of a chemical injury to normal endothelial cells brought to them from an unfriendly component in the aqueous. I know of no histological or biochemical differences in the sparse guttae-ridden posterior surface of a cornea with that so-called dystrophy or of a cornea that has suffered from endothelial cell death from inflammation or trauma.

My experience is clinical — an impression. The next step would be to prove or disprove the hunch through a logical sequence of research that is combined with clinical observation. Once you catch the habit of watching for unsubstantiated assertion, you will become quite critical of most meeting speakers — perhaps to a fault. You may find — as do I — that your own clinical impressions are flawed by inconsistencies or overinterpretations. Harnessing objectivity can be a disquieting process, but a better option than the arrogance of unrealized ignorance. In some regions of the world, professors are still handled (or demand the handling) as near-perfect beings; junior staff members would not dare to argue with them. Authority of office can be substituted for authority in science and education. Too bad.

Hold on. Do you give your patients drops to treat their cataracts? Do you know of scientific evidence that those drops you prescribe are capable of doing what you permit your patient to believe they may do? Shame! How can you criticize a professor for being authoritarian? How can it be that there are several dozen different proprietary eye drops sold by respected manufacturers for the prevention or treatment of cataracts? I’ll get to commercialism later. At this point the matter is pertinent to facts vs. clinical-impressions-plus-wishful-thinking. And to keeping your patients harmlessly misinformed? Too harsh? Some day soon there really may be a medication to do what those eye drops are sold to do.

COMMERCIAL

There is a new commercialism that tempts us to be half-doctor, half-businessman. This is what I mean:

“Quite frankly — and just between you and me — one of those speakers makes a portion of his living from the royalties of sales of the instrumentation he advocates. I think he also has something to do with the manufacture of intraocular lenses that he designed. I really don’t know if I should believe what he says because I don’t know what his vested interests may be.” End of scene.

“I said nothing about the Black Box and Lens Company because, Sir, I have no personal interest…”

“But your former partner told me that the company is in the name of your second son!”

“You see, I am removed from personal interest by an entire generation. Thank you for helping me to bring out that important point in setting the record straight.”

ANECDOTES AND ADVERTISING

The human mind is a hungry computer. We tend to indulge it with “junk food.” Despite technical education and sophisticated science, our medical mentality still succumbs to the flamboyant Testimonial Anecdote. Smooth talk, packaging, bitter taste, and an audience with emprise-

ment were the ingredients that made snake oil a best seller at country fairs for many decades.

We doctors are the same kind of suckers for the expert “sell” — even though we know deep down in our medulla oblongata that the persuasion is anecdotal at best. Read ancient medical books and you will be intrigued by the pure-culture, picturesque accounts of medical therapies whose successes were “proven” by a case of two or assumed relationship between management and outcome. Those ancient authors knew nothing about Koch’s postulates. We know those postulates, and we seem to be almost as gullible in our acceptance of slick, orchestrated, enthusiastic assertions of medical or surgical prowess. There would be a less significant knowledge gap for all practitioners if we would go about our learning and teaching with more science and less theatrics. There is a thin line between some forms of teaching and professional advertising. Anecdotes help advertising, as do illustrations: “Allow me to show you my new IOL design. It will focus at distance and near; it is especially good for persons with macular degeneration (Figure 2). I have used it in a blind eye, and it is ready for clinical trial. Ask me back next year, and I’ll tell you…” Wow!

Giving talks at medical meetings is a form of (acceptable) advertising. It is not billed as such, especially with the IRS of the USA (code words). Watch out for the surgical film. It may be vitally important and intrinsic to professional education — infinitely better than slides for many purposes, but potentially quite dangerous. The film as presented at meetings such as this is important for conveying informa-
tion as to how an extracapsular cataract extraction is performed and a posterior chamber lens is slipped into position. However, for us to watch edited surgical "perfection" is to know just a bit of the relevant truth. What does that surgeon do when there is bleeding? How does he manage the eye if vitreous is lost? Is this wonderfully heroic surgical case followed by sustained visual success that has provided that eye with a better alternative than had surgery not been done?

All of us who give talks participate to some extent in a bit of bravado and compromised gospel. Look at one of the corneal grafts I did six months before the photographs were taken, both on the same day (Figure 3). The people who are totally honest somehow seem to be boring and less effective advocates of a changing specialty.

"Change your ways!"

"You first."

We are not actually all that bad. I have exaggerated to make the points. Poetic license — a very forgiving term. I don't know the equivalent in medical jargon.

SKILLS TRANSFER

Education is another big issue inextricably bound with our future. I will omit hackneyed description of the knowledge explosion of our era and merely acknowledge its existence and turn to some thoughts about how we can cope with it.

FIGURE 2 (Paton): Hypothetical intraocular lens cartoon prepared for the author by his friend, John Craig, M.D.

FIGURE 3 (Paton): On the left is a fine example of cosmetically excellent keratoplasty; on the right is a fundus photograph taken of the same eye on the same day: irreparable retinal detachment.
Going back to that simile of the mind as a computer, the challenge we face is how to systematize the input to get maximum output effectiveness. Education in itself is a science. The first thing we must try to do is separate fact from fiction and acknowledge anecdotal information as such. Medical educators must find more practical means for the individual doctor to fulfill his own special needs and particularly to gain new skills along with new cognitive knowledge. The doctor’s goal, of course, is to render the best possible medical care. To do that, our education should be directed toward improving competence — not toward merely amassing more and more isolated bits of medical information. Competence derives from cognitive knowledge, skills, and judgment. Traditional instruction in medicine for practitioners has been almost exclusively related to a quest for cognitive knowledge alone. Continuing medical education can no longer take the “shotgun” approach offered by the assorted menu of most medical meetings. Manual skills must be taught along with the concepts of changing surgical systems.

Take cataract surgery as an example. The ingenuities of extracapsular surgery and intraocular lens implantation continue to proliferate. I have no doubt whatsoever that if all ophthalmologists had the opportunity to learn thoroughly one of the ways to do a complete extracapsular extraction, this would become the procedure of choice worldwide with or without the intraocular lens option. We spend a great deal of time in our continuing education. The average ophthalmologist is content with his commitment of spending hundreds of hours per year in reading, attending lectures, and talking with his colleagues about medical problems. However, almost none of that time is spent in a formalized process for skills acquisition. That seems rather extraordinary when one considers that how the doctor wields the knife may be the most critical aspect of his patient care. It is not the doctor’s fault that he does not spend more time in acquisition of new manual skills. The opportunity does not exist. In another presentation at this meeting I have spoken about Project ORBIS. The crux of that clinical experiment on a worldwide scale will be a program to offer an essential doctor-to-doctor exchange of relevant knowledge, particularly skills transfer.” It is my belief that this is the most overlooked aspect of continuing medical education. The lag in transfer of practical knowledge leads each of us to unspoken uncertainties and professional frustrations whose effects may be subliminal but quite devastating. Each of us is quick to condemn what we cannot master. We cannot master what we have no proper opportunity to learn.

The actual process of cataract surgery may become an isolated function performed by the few for the many — to the point where the preoperative and postoperative commitments of the surgeon may become neglected. If there were optimal facilities for skills transfer, that potential situation might not materialize. In the meantime, there are “private factories” for cataract surgery springing up like mushrooms. Solo, manually-practiced doctors have veritable production line surgical services. The “have not” surgeons fester with the neglect of their own surgical exercise as compared to the “haves.” It is a pity. Either we learn to learn updated manual skills, or we will have a totally different practice profile for future types of ophthalmologists.

“Do you do phacoemulsification, doctor?”
“Yes, I have a framed and signed certificate hanging by the window; it proves that I do.”
“What about intraocular lenses?”
“I have also taken a course of instruction in that technique — my certificate for lens implant hangs . . .”
“And yet for me you advise the traditional incision method . . . why is that?”
“It is better that way.”

Yes, it is better to manage the patient with the technique that the surgeon is most comfortable with, rather than yield to the temptation of taking added risks by using a method incompletely or inadequately transferred from teacher to colleague by short courses using animal eyes. There is a vast need for developing improved and broadened educational offerings to the practitioner that will have a positive impact upon his professional competence. Please note that nowadays the most proficient microsurgeons often are full-time practitioners. There is much for Town to give to Gown, or Town to Town. The poor old professors.

ETHICS

I risk being even more pedantic and sanctimonious in talking about medical ethics. Holier-than-thou preachers annoy me immensely. I believe that most everybody is equally good and bad. It is the pressures and fortunes of societal complexities that cause digressions here and there, now and then. But should we not tighten up old standards that have characterized all strong civilizations? We doctors take the oath of Hippocrates. Times change. Doctors make fewer house calls. Lawyers take over center stage. Bang! Suddenly it is not the meek but the lawyers who seemingly are inheriting the earth — their breath is everywhere: in business, in legislatures, behind ambulances, before the bar — sitting as judges. Nothing much can actually be official without a lawyer. They write the rules; they call the shots. They make it legal for doctors to advertise. They are able to pulverize reality into tiny bits of “meted” justice determined more by the skill of the lawyer than what seems to be ethically right or wrong.

I suppose soon even the oath of Hippocrates will be attacked as untenable. It is not the doctors’ fault; it is the lawyers’! Thank goodness that we medical people are innocent. In the USA it has become unnecessary for a residency program director to mention in his recommendation of a candidate for Board Certification that the applicant is morally and ethically sound — because if the applicant is rejected on that basis of alleged character weakness, he can sue the Board and the program director, and he probably will win his suit if he is short of being a maniac. For a program director to fire a trainee for perceived failure to perform satisfactorily as a doctor brings much likelihood that the director will be sued by the fired doctor — even for
millions of dollars. If you are a trifle sensitive, then in self-assessment you probably admit to being less than impeccable in your own conduct. Ethics are tough rules to play by.

FINIS

In this rambling and all too righteous talk I have tried to speak of the future of ophthalmology in the context of present disquieting but selected circumstances that are troubling modern medical practice. By inference, at least, I have suggested where we must change and what probably should be preserved. The future is challenging and exciting. We have the chance to move the current state of the art of medicine to encompass new science and the old philosophical principles. We will. The pendulum always swings back again.

Surely there must be no reader who believes this author would find any system of society better than the one in which he lives. To be able to criticize ourselves, to admit inadequacies, to acknowledge that there are wrongs amid that which is right — these are the qualities of human frankness that must be preserved. Watch out for the surgeon who claims no complications and the society that does not recognize its deficiencies.

In the end, the satisfaction of medical practice will always be its greatest reward and its guiding influence. Figure 4A shows the only eye of a 45-year-old, prematurely-retired schoolteacher: a chemical injury led to the loss of the other eye and to extensive corneal edema, band keratopathy, cataract, and vision of only hand movement perception. A

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**FIGURE 4A (Paton):** The only eye of a 45-year-old man with history of chemical injury, corneal edema, band keratopathy and cataract.

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**FIGURE 4B (Paton):** The same eye is shown at a point two years after combined cataract extraction and keratoplasty. The graft is crystal clear and the vision is 20/50.
combined transplant and cataract extraction was done (Figure 4B). Five years later the patient still enjoys 20/50 vision. He brought me a gift of his sight — a painting he created using that repaired eye (Figure 4C). The ship is docking. Wow!

REFERENCES