

Navigating Changes in Clinical Practice

Remembering the destination will keep the ship on course.

BY GEORGE L. SPAETH, MD

Given the constant changes in definitions and technologies, how does one chart a course that results in optimal care for a person with glaucoma? Guiding a ship through a fog provides a helpful metaphor to answer this question.

THE DESTINATION, NOT THE LANDMARKS

Physicians tend to be content to note the various buoys along the way and to forget that those buoys only mark the course to the desired destination. Another problem is that the color, position, and shape of navigation buoys (in this case, markers for glaucoma) change over time. It is essential to bear in mind that the desired destination or goal is constant: a happy, well-functioning patient.

THE IMPORTANCE OF THE COMPASS

It is easy to become fascinated by the excitement, fun, and potential of technologies and to forget their purpose. The exact position of the magnetic pole changes only slightly over time, and working compasses north of the equator point to that magnetic North Pole, unless interfered with by confounders such as nearby strong magnets. In the field of glaucoma, the “compass” starting in about 1850 was pressure, and until around 1950, most ophthalmologists steered patients’ care by IOP. Unfortunately, as clinicians know now, that compass often pointed in the wrong direction. Ninety-five percent of patients with “elevated pressure” do not develop glaucomatous damage, and around one-third of those with glaucomatous damage do not have elevated pressure. It is therefore not surprising that many patients did not reach their destination of feeling and functioning well.

Other compasses have been suggested over the years as the best guides to the care of patients with glaucoma. One was the coefficient of aqueous outflow, “C.” Superb textbooks, such as those authored by Becker and Shaffer and by Chandler and Grant, devoted many pages to tonography, a subject not even indexed in recent comprehensive texts dealing with glaucoma. Realistically, however, one

could easily argue that C is just as useful as IOP, even when the latter is “corrected” by central corneal thickness and hysteresis.

A dangerous practice in the field of glaucoma has been to combine findings in the hope that, together, they will provide a valid compass. A suspicious visual field, for example, becomes valid when apparently confirmed by a suspicious disc image, yet there is a one in four chance that they will agree. Almost anyone who is 80 years of age (meaning that he or she is at risk of developing glaucoma) will have a suspicious visual field. If his or her medical record also includes a suspicious image of the optic nerve, this poor person will be spending money on unnecessary drops to treat the glaucoma that he or she does not have.

A basic problem has been considering glaucoma as a thing, a noun, something able to be defined by another noun or set of nouns, such as risk factors. Glaucoma, in fact, is a verb. It is a process. As is true of many processes, such as thinking or living, glaucoma cannot be seen directly. A changing process is signaled by noticing the occurrence of change or a definite manifestation that change has occurred. In the early stages of glaucoma, the only reliable compass is usually the observation of change, particularly of an objective phenomenon such as narrowing of the neuroretinal rim or thinning of the retinal nerve fiber layer. A cup-to-disc ratio of 0.8 is uncommon in a person without glaucoma, but it can occur. Likewise, a nasal step is uncommon (but not unheard of) in a person without glaucoma. A cup-to-disc ratio of 0.8 combined with a nasal step does not mean the patient has glaucoma.

Millions of patients have findings that could be manifestations of glaucoma. If one were to diagnose and treat all those people as if they had the disease, the amount of overtreatment and the number of people harmed would be staggering. The temptation to overdiagnose and overtreat is tremendous. Physicians naturally do not want a patient’s health to worsen on their watch, so they have a marked bias toward treating individuals for whom the necessity of intervention is questionable. It is easy to forget

that every treatment makes an asymptomatic patient worse. Every new technology is promoted by somebody who stands to benefit from its development. *Caveat emptor!* Many of these products and procedures are truly elegant and provide information that can make patients better, but how often does that take place? Rarely.

At the other end of the spectrum is the much smaller number of patients who have unquestionable glaucomatous damage. Repeat visual field examinations or disc evaluations in such individuals are often worse than a waste of money, because they frequently give the false impression that further deterioration is not occurring. Repeated zeroes on sequential visual field examinations do not indicate that the patient is not experiencing progressive visual field loss. Rather, they only suggest that, when the first visual field was performed, the light stimulus was already small and dull enough that the patient could not see it; a zero does not mean that the person is blind in that area. Similarly, slight alterations in the structure of the optic nerve might cause marked changes in function in patients with advanced glaucoma. The changes are often smaller than an instrument can detect reliably. A careful history validly reveals stability or deterioration.

SUMMARY

It is all too easy to get lost in a fog of unimportant data. Concentrating on the essentials and knowing how to use them provide a sure compass.

The physician must obtain a valid, quantitative history. He or she must perform gonioscopy correctly while recognizing the variations in the appearance of a normal anterior chamber angle. The clinician must know how to define the inner and outer edges of a neuroretinal rim and how to distinguish normal from pathological findings, and then he or she must properly use an ophthalmoscope to examine the optic disc through a dilated pupil. IOP asymmetry is an important finding. Target IOPs should be reset at least yearly. Patients require a thorough examination, the frequency depending on the presumed rate of change. Treatments can be as dangerous as diseases, and patients should not be treated unless, without treatment, they will develop a disability.

The destination remains a happy, well-functioning patient, as it was 10 years ago, 50 years ago, and 5,000 years ago. Only the buoys change. □

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