Low-Vision Services and the Glaucoma Patient
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The World Health Organization estimates glaucoma to be the third leading cause of low vision globally. Glaucoma patients experience irreversible vision loss that can greatly affect their ability to perform activities of daily living, to engage in social interaction, to read comfortably, and to function in an independent and safe manner. Individuals with bilateral disease in particular have 2 to 3 times more difficulty performing activities of daily living. Moreover, glaucoma patients are at an increased risk of falls and motor vehicle collisions, which can have an impact on morbidity, mortality, and overall quality of life. The combination of these factors contributes to anxiety and depressive symptoms in 30% to 56% of glaucoma patients.

In low-vision services (LVS), functional difficulties are assessed and patients receive education about strategies that can be used to maximize their remaining vision. These include training in the use of aids and devices, occupational therapy, mental health counseling and introducing patients to a variety of social service and support groups. Low-vision services significantly benefit those who attend. The Low Vision Network Research Study Group found that nearly 50% of new patients attending LVS appointments experienced a clinically meaningful improvement in visual ability after rehabilitation. Lamoureux et al. also reported improvements in reading ability and emotional well-being of patients who completed a 3- to 6-month low-vision rehabilitation program. Although no study has been carried explicitly to evaluate the outcomes of glaucoma patients attending LVS programs to date, both of the above-mentioned studies included patients with glaucoma.

Low-vision services do not replace the medical and surgical care we provide for our patients, but they do serve as an important part of ophthalmic care and help our patients to function better and lead higher-quality lives. Often, the conversations we have with our patients are centered on objective clinical measures of their eye conditions and not questions about function. The problem herein was best explained by Spaeth et al., who wrote that “patients with or suspected of having glaucoma are not interested, initially, in their [intraocular pressure] or visual field or optic disc but rather are interested in those things that impact their quality of life directly, such as how comfortable they feel and how well they see.”

Although the potential benefits of LVS are known, referral and attendance rates for LVS are quite dismal. In a recent study carried out at a publicly funded eye clinic in Alabama, staffed by ophthalmology residents and attending ophthalmologists, the rate of referral to LVS for patients who met diagnostic criteria for low vision and reported being bothered by vision loss was less than 12%. Glaucoma is a leading cause of low vision, yet only 14% of patients attending LVS in the United States have a diagnosis of glaucoma, as compared with 67% of patients who have a diagnosis of age-related macular degeneration (AMD). The reason for this discrepancy is unknown because there is no evidence to suggest that LVS are more likely to benefit AMD patients than glaucoma patients.

Why are so few of our patients attending LVS programs? A theory is that the vision loss our patients experience may be less obvious than that of AMD patients; our patients lose peripheral vision and contrast sensitivity well before central visual acuity, whereas AMD patients lose central visual acuity first. Because central visual acuity is measured at every clinic visit, there may be more opportunities for providers and staff to identify patients with central vision loss as compared with patients with peripheral vision loss, such as those with glaucoma.

The American Academy of Ophthalmology’s (AAO’s) Preferred Practice Pattern and SmartSight guidelines ask us to identify patients with best-corrected visual acuity less than 20/40, visual field loss, a scotoma, or contrast sensitivity loss who have vision-related functional problems and to offer them a referral to LVS. The Glaucoma Activity Limitation questionnaire consists of 9 questions focused on ambulation and can be administered quickly in a glaucoma practice to help identify patients in need of LVS. A patient handout is available on the AAO website. This handout has recommendations on simple things patients can do on their own to maximize their remaining vision, a list of resources for low-vision aids, and contact information for support groups and local low-vision rehabilitation centers.

At a LVS program, patients complete a battery of testing to assess symptoms, visual function, mobility, and mental health. A team of low-vision specialists and occupational therapists work with patients to raise awareness of functional

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deficits, to assist patients with mobility issues, and to address
difficulty with contrast, glare, and size. Some of the training
our patients can anticipate at LVS programs include: reducing
tripping hazards, awareness of environmental boundaries, and
scanning strategies; use of devices to increase contrast and
reduce glare such as glasses and filters, reduction of the use of
reflective surfaces, and covering and re-angulating lighting;
learning how to increase object size with various magnifiers
and brightly colored objects; and medication management
with talking labels, medication alarms, and other organiza-
tional techniques.

A survey of members of the American Glaucoma Society
found that respondents who were familiar with the published
guidelines on LVS tended to be high referrals. Unfortunately,
this consisted of only 22% of survey takers. Among barriers
to LVS referral that were reported by American Glaucoma
Society members, nearly one quarter of respondents cited
being unclear on guidelines or lacking adequate experience
with low vision. When asked about educational experiences
with LVS, 81% of respondents reported having been exposed to LVS during training years, particularly
during residency. However, exposure during training years
did not influence the number of referrals to LVS, as
reported by respondents. These findings suggest that there
may a gap in the education that occurs in the early years of
ophthalmology training and points to a need for improving
the educational experiences of residents and fellows.

There are no clear guidelines or recommendations on
how to teach trainees to discuss vision loss or to introduce
LVS to patients. The Accreditation Council for Graduate
Medical Education and Association of University Professors
of Ophthalmology requirements are vague, and the imple-
m entation of these requirements also can vary by teaching
institution. Much of the emphasis of low vision on the
Ophthalmic Knowledge Assessment Program examination
and the national boards is on optics and refraction.
Currently, efforts are being made to expand educational
opportunities for trainees and practicing ophthalmologists
by the AAO’s Vision Rehabilitation Committee. In the near
future, additional LVS educational content is planned for the
Basic Clinical Science Course series. A learning plan is also
being created on the AAO website that will be available to
trainees and practicing ophthalmologists. There will also be
a symposium on glaucoma and low vision at AAO’s annual
meeting in 2019 that will offer guidance on how even busy
glaucoma specialists can recognize and respond to the low-
vision needs of their patients.

We hope that this editorial will motivate many of you to
start opening up discussions about vision-related quality of
life with your patients earlier in the course of their disease
and to refer them to LVS when appropriate. It is important
to stop thinking about LVS as a place to send patients when
“nothing more can be done” and to start thinking of them as
partners in the holistic care we provide. Take some time to
explore the LVS near your practice, read over materials on
the AAO website, and consider attending a continuing
medical education course on this topic. For a list of re-
sources, we encourage you to access the AAO’s Initiative in
Vision Rehabilitation: https://www.aao.org/low-vision-and-
vision-rehab.

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