Functional Impairment and Visual Loss

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Case Vignette

Mrs. Johnson, an 87-year-old woman with poor vision due to age-related macular degeneration, recently lost her husband of 65 years. While her husband was alive, she was able to carry out many of her daily activities independently without his help apart from driving. She needed occasional assistance with the remote control and phone and used a magnifying glass. She prepared meals with his assistance reading small print recipes but operated the stove and microwave without difficulty.

With his passing, there was concern that she may not be able to continue living alone because of her poor vision. Her daughter requested that her mother move into the daughter's home. Mrs. Johnson was hesitant because she did not want to be a burden and was quite comfortable in her home of 60 years. While she had friends who offered to take her shopping and out to socialize, there was no one close to help her with activities of daily living. Her daughter prevailed, and her mother sold her home and moved in.

At first, things seemed to be going well, but when Mrs. Johnson was left alone in the house for several hours, there were some concerning issues. When using the stove, she often set the temperature too high and had burned

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several items; on one occasion, she forgot to shut off the gas burner. It was also noted by her daughter that Mrs. Johnson stopped watching her favorite television shows. On questioning, she stated she was unable to get the television channels she liked. Over a short time, she had withdrawn from family activities, stopped visiting with her friends, seemed to be losing weight, and appeared depressed.

Mrs. Johnson's daughter took her to see a doctor who specialized in geriatrics and set up a visit with her ophthalmologist to see if there had been any decline in vision.

Practice-Based Learning and Improvement

Functional visual loss can be exacerbated by both progression of disease and change in social or environmental setting. Most persons with permanent vision loss can be assisted with properly selected optical and nonoptical aids along with low-vision training. While the vision may not be correctable, the goal is to maximize the vision patients do have to restore the person's ability to function and maintain a sense of self-sufficiency. For the elderly person, visual assistance may provide a new outlook on life, preventing depression because of an inability to read, write, or maintain hobbies (Fig. 1) [1]. In visually impaired older patients, 13.5% have depression, compared to 4.5% of those with good vision [2]. For those with macular

Fig. 1 The loss of strength and mobility with age is compounded by the loss of vision, increasing the risks of falls and fracture. Addressing the reversible causes of vision loss can greatly increase an elderly patient's independence

degeneration, the same disease our patient has, between 10% and 30% develop clinically significant depression; vision loss complicated by depression is associated with higher levels of disability, medical costs, and mortality than vision loss alone [3]. Because of this, exploring the opportunities available for the visually impaired is extremely gratifying for the patient and the provider.

As people age, a change in physical surroundings can prove difficult, and this is exacerbated in those with visual impairment. People with visual impairments become familiar with surroundings, enhancing their ability to perform daily tasks in the setting of decreased vision. For example, a visually impaired patient may know it takes ten steps to get from their bed to their bathroom. When these patients move to a new environment, not only do they have to adjust to their new surroundings, but they have to relearn tasks that were previously very easy for them, such as going from the bed to the bathroom.

For our patient, when she was first diagnosed with macular degeneration, she had difficulty reading labels on medications, reading the newspaper, and following directions on food items. She learned to use a magnifier to help with this, and when that didn't work, she would ask her husband for help. She could not see the dials on her microwave or the stove, but with low-vision aids and a low-vision rehabilitation specialist, she was able to master these tasks in her own home. Her husband was there to assist her when she had some difficulty, but for the most part, she functioned very independently. When moving to her daughter's home, she could still use magnifiers to help with some items, but she would need to relearn and label other items. Recognizing these changes and providing training in the home could aid in increasing her independence in a new environment. With certain changes and updating her low-vision devices, she may even be able to function without assistance.

Patient Care

It is the role of the doctors caring for these patients to make sure low-vision care is provided either during an office visit or by referral to a low-vision specialist. The doctor caring for this woman needs to relate her eye disease to how the patient is functioning at home. Information should also be obtained about what areas could use improvement and inquire about the goals and expectations of the patient and family. Then the doctor can begin to provide information about appropriate low-vision aids or referral to low-vision resources for more specialized training and care. The clinician should also be cognizant of the link of vision loss to depression. A recent study found that in addition to providing vision training, providing some behavioral therapy can significantly improve depression. The low-vision depression prevention trial in AMD showed that an integrated mental health and low-vision intervention halved the incidence of depressive disorders relative to standard outpatient low-vision rehabilitation alone in patients with AMD [3]. Behavioral therapy referral provides another means to aid low-vision patients beyond prescribing low-vision aids. The link between vision loss and depression demonstrates the importance of communication between the ophthalmologist and the patient's other medical providers.

Medical Knowledge

Functional vision loss caused by ocular or neurological disease can affect people in different ways. The relationship between eye disease and functional vision has been well described by Eleanor Faye, MD. Her work on this subject enhanced our understanding of the functional implications of medical disease [4, 5]. Understanding these concepts has led to improved evaluation and management of patients in need of low-vision rehabilitation.

From a low-vision function standpoint, visual deficits are broadly divided into three categories: cloudy media, central field deficit, and peripheral field deficit. Cloudy media may cause a generalized blurring or haze. Patients with recent vitreous hemorrhage or a dense cataract may complain of blurry vision. Details may be hidden, and patients may be troubled by glare. Sometimes patients will also complain of color distortion or that everything looks a shade darker, like "looking through a dirty windshield." In these instances, absorptive lenses may help by improving contrast and reducing the glare. Central deficits, as seen in patients with macular degeneration, may make near tasks difficult. Details of faces may be distorted or blurred in the center, although they should be able to see peripheral parts of the face such as forehead, ears, and chin. Reading and fine work may be difficult, but magnification may help improve the performance of the patient with a central field loss. Peripheral deficits can be caused from diseases such as advanced glaucoma, retinitis pigmentosa, or neurologic disease affecting the visual pathways. Patients with peripheral deficits may have difficulty with mobility or seeing in dim illumination. Affected patients may have trouble crossing the street or moving easily in a crowded mall. Sometimes they may walk into walls or seem easily startled when people approach them from the side with limited vision. Depending on the severity and involvement of the eye, diabetic retinopathy can cause both central and peripheral vision loss. Central loss in diabetics can be seen when the macula is involved and peripheral loss may follow a dense vitreous hemorrhage or a traction retinal detachment. Peripheral loss may even be due to the laser treatment used to help control the diabetic retinopathy. Considering the type of functional vision loss can help the practitioner to plan for the optimal rehabilitation of the patient.

This patient has macular degeneration, and in her new environment, she had difficulty with reading the remote control, setting the stove, and operating the microwave oven. Her ability to function independently was threatened. An understanding of the functional loss before the move may have enabled smoother transition so that the appropriate optical and nonoptical aids could have been introduced and updated for the new environment.

Interpersonal and Communication Skills

The ophthalmologist recognized the concerns of both the patient and her daughter. The physician was able to put the daughter at ease that her mother's eyes were stable and that she had not lost any further vision. They were also able to reassure the patient that she was not developing any new eye disease. They discussed her

problems since she moved and was able to understand the difficulties she was experiencing. Moving in with her daughter had exacerbated the depression she developed over the loss of her husband. She had lived in her home for 60 years and had adapted well there after she started losing vision. In addition to leaving her familiar home, complicating her daily activities, she moved away from her friends and from the senior center she frequented. This alone would have been enough to exacerbate her depression, but the environmental change in the setting of impaired vision and with little preparation to the new home left her in a dependent position.

Professionalism

The ophthalmologist put the family in touch with local vision rehabilitation services. An appointment with a vision rehabilitation specialist and a low-vision physician was arranged. The ophthalmologist also contacted the internist to discuss the medical condition of this patient and to discuss the depression she was experiencing. They asked the internist to see and evaluate the patient for possible intervention.

Approach to the Visually Impaired Patient

When greeting a visually impaired patient, the doctor or the doctor's assistant should introduce themselves to make the patient aware of their presence. The person accompanying the patient through the office should always offer their arm to the blind person. With their hand lightly on the arm, the patient is able to feel the movement of the assistant's body. The assistant should remain slightly ahead of the patient in order to lead them, as being propelled from behind can be awkward. One should ask a blind person if they need any help, not forcing assistance. The patient should be escorted to the examination room, and the patient should be told where the furniture is within the room. The patient's hand is placed on the chair or table so the patients can seat themselves properly.

Any paperwork to be completed by the patient should be handled in a private setting by an office staff member rather than a driver or friend. The patient may not want to share confidential medical information with another person. If a blind person has been left alone, they should be informed about their surroundings. It is desirable to orient the visually impaired person to the room by telling them where things are such as a table, chair, or wall and to let the patient know if the door will be left open, so the patient can call out for assistance if needed.

Systems-Based Practice

The effect of eye disease on functional vision loss needs to be recognized. Most persons with irreversible subnormal vision can be assisted with properly selected optical aids or proper training.

It is the role of the doctors caring for these patients to make sure that they receive the help they need to maximize their independence in the setting of impaired vision. Low-vision care either on site or by referral to a low-vision specialist should be discussed. The vision loss should be treated as a medical problem as it can lead to other medial problems if not properly addressed. The doctor needs to make sure that despite vision loss, the patient has the resources to perform tasks such as taking their medicines and getting to other medical appointments. If the patient cannot complete these things, further referrals need to be made with the help of the primary care physician. It is very important to communicate with the patient's primary care physician about the status of visual function. The primary physician is a valuable resource in referring the patient to the appropriate resources. When we really understand the patient's current level of functioning along with their needs and goals, we can then begin to treat and provide needed low-vision care and assistance.

Case Resolution

The patient went to her ophthalmologist for an exam to confirm her diagnosis and to be sure that her eye condition was stable and that nothing else was developing that would need treatment. She informed the doctor of her life changes, and she was referred to the low-vision clinic. The low-vision clinic provided her with some new low-vision aids and devices that she had not used before. They also set her up with an occupational therapist to come to her new home to help make some environmental changes and provide in-home training to increase her independence.

The ophthalmologist took care of the patient by making appropriate referrals to treat the whole patient and not just the eye pathology. They explained the relationship of vision loss to loss of independence and depression. They connected the functional vision loss of the patient with the decline in her activities of daily living. Being able to see the whole picture enabled this ophthalmologist to provide the best care.

The patient visited the low-vision clinic where she was able to have her low-vision aids adjusted for her new environment. She also was put in touch with a low-vision support group so she might be able to share her experiences. A vision-rehabilitation teacher visited the home and marked the dials on the kitchen appliances, enabling the mother to see them. A large-numbered telephone was purchased as well so she did not have to try to see the cordless phones with "tiny" numbers located around the house. Additionally, a new remote control device for the TV was purchased. Both daughter and mother learned to share their fears and concerns and agreed to keep each other informed so they could have open communication.

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