Low Vision: When Vision Fails

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Case Vignette

An 80-year-old woman and her 85-year-old sister visited their ophthalmologist due to decline in vision over the past few months. The younger sister had assumed many of the homecare responsibilities as her older sister had some visual limitations and early cognitive impairment. Until recently, the younger sister had been able to drive, prepare meals, read prescription labels, and pay the bills without any hesitation. Lately, she was finding managing the home to be more difficult due to vision impairment, and she was hoping a new pair of glasses would help. The older sister was content with her life situation and was happy with audiobooks and a reading radio service. Since her sister drove and prepared meals, she noticed little loss in her daily activities and was just hoping to get some stronger reading glasses. Unfortunately, both sisters were found to have macular degeneration, and glasses were unlikely to help.

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Practice-Based Learning and Improvement

As our population ages, the incidence of patients with impaired vision increases. The 2015 National Health Interview Survey found that 7.3 million adults 65 and older reported having experienced significant vision loss [1]. When this vision loss cannot be corrected with glasses, medical treatment, or surgical intervention, the loss of visual function is referred to as low vision (Fig. 1). As eye doctors, it is important to determine which patients fall into that category. Identifying their loss and providing treatment options are essential to maintaining productivity and independence. The cost of caring for those with blindness and vision impairment is rising yearly. A study by Rein et al. (2006) estimated the cost of total financial annual burden in the United States to care for major adult visual disorders to be $35.4 billion ($16.2 billion in direct medical costs, $11.1 billion in other direct costs, and $8 billion in productivity losses) and that the annual governmental budgetary impact is $13.7 billion [2]. Another study by Frick et al. (2007) estimated medical costs due to low vision to be $5.5 billion per year and that the value on the loss of quality of life was $10.5 billion per year [3]. With these two studies combined, Prevent Blindness America reported that cost of adult vision problems approaches $51.4 billion per year [4].

Fig. 1 Low-vision aids facilitate the pursuit of the activities of daily living (in this case telescopic lenses for TV viewing)

The impact on the patients and their families is not only economic but also social due to the significant increase in depression associated with vision loss [1]. Loss in vision can lead to a decrease in social interaction and functioning, which can lead to a decrease in physical activity. As older individuals are less active, they can lose strength and become less independent. Additionally, with a decline in physical activity and social interaction, emotional well-being may also decline. It is estimated that among older people with vision impairment, 57.2% are at risk of mild or moderate depression [5]. If patients are suffering from both vision loss and depression, they may not be as successful at low-vision intervention and vision rehabilitation. If they are not getting the most out of their vision rehabilitation, this can also lead to a loss of independence and a vicious cycle ensues.

In this case report, these sisters had depended on each other for many years – emotionally, socially, and financially. They had pooled their retirement resources to secure safe housing, and they functioned independently. Now that the younger sister could no longer drive safely or perform visually as she had previously, they needed outside assistance. Their ophthalmologist provided information from the American Academy of Ophthalmology low-vision and rehabilitation website [6], along with information about resources available in the community and a copy of low-vision smartphone applications.

Medical Knowledge

The ophthalmologist performed a complete eye examination on both sisters and determined that they would not be candidates for laser treatment or intraocular medication. It was felt that both sisters should continue taking the AREDS II formula multivitamins and be given the best-obtained refraction with a higher reading add to enable them to see print with greater ease. The ophthalmologist was aware that almost a quarter of patients with impaired vision have trouble managing their household duties. In a study by Brody et al., approximately a third of patients with advanced macular degeneration demonstrated a depressive disorder [7]. With this in mind, the ophthalmologist wanted to maximize their usable vision and referred them to a local Vision Rehabilitation Center for evaluation and low-vision treatment.

Patient Care

The sisters visited the low-vision center together. They had the opportunity to speak with a social worker who was able to assess their living situation and provide them with a referral to an eldercare agency. The agency was able to provide services including transportation to shopping and to medical appointments. They also provided aides to help them maintain their home by helping with every day tasks. Alternative living scenarios were suggested, and visits to assisted living homes were arranged. A social worker was assigned to help evaluate the sisters' success in

performing IDLS (instrumental activities of daily living skills) such as meal preparation, using the telephone, housekeeping, handling finances, and taking medications safely.

Interpersonal and Communication Skills

The ophthalmologist discussed their findings with the primary care provider (PCP) who was caring for the sisters. The PCP agreed to encourage the sisters to look into available services and possibly assisted living as there were no local family members to check in on them and provide support. Both the ophthalmologist and the internist had known the sisters a long time, and their relationship with them was such that the sisters were receptive to the doctors' suggestions. The sisters got involved in a low-vision support group that participated in social outings with other low-vision patients. Through the low-vision clinic, they were set up with a physical therapist who enrolled them in a strength building class for those at risk for falls. With their new physical strength and social confidence, they were able to maneuver within their world despite their impaired vision. Because the ophthalmologist and internist made the time to help connect these patients to outside resources, they made a difference in the sister's lives. Taking the extra time from a busy practice to make sure the proper referrals are made could be the difference between a poor outcome and a good quality of life.

Professionalism

Their ophthalmologist went the additional step. After providing initial low-vision care on site by improving and maximizing the sister's vision with a stronger reading add and updated refraction, they referred them to a Low Vision Center. They were plugged in with occupational and physical therapy to keep them physically active. They also were referred to an elder care agency, which helped them navigate the often complex system. Communication and linkages between providers were initiated.

Systems-Based Practice

A study by Javitt et al. (2007) showed that Medicare beneficiaries with a coded diagnosis of vision loss incurred significantly higher costs than those with normal vision. Of these costs, 90% were actually non-eye related because any degree of progressive vision loss was associated with increased odds of depression, injury, skilled nursing facilities utilization, and long-term care admission [8]. By providing the sisters with appropriate intervention, their risk of depression and injury and

perhaps long-term care admission could be reduced. Taking all of this into account should play a role in each provider's plan of care for his or her patients. By doing this, the patient receives the best care in the most efficient, cost-effective way with attention to the whole person and not just the visual system.

Case Resolution

The sisters each received a comprehensive low-vision evaluation. The older sister enjoyed her nonoptical low-vision aids such as a talking watch, talking clock, and audiobooks. She also utilized a magnifier with built-in light that she could wear around her neck that allowed her read large print playing cards, notes left for her by her sister, and a list of emergency phone numbers. The younger sister made use of several magnifiers to help her complete daily tasks such as reading labels on medication bottles, directions on food packages, reading the mail, and paying bills. A closed-circuit TV (CCTV) was demonstrated, and she will consider this if and when her vision deteriorates (Fig. 2). A rehabilitation teacher for the visually impaired spent a few hours with the sisters in their home and marked the microwave, oven, washer, and dryer with marks that were raised and bright so that they could see and feel the dials to utilize them properly. The rehabilitation teacher also looked around the home for other ways she could simplify their vision concerns and make the home safe. Additional services were offered and lists of groups for older adults with vision impairments were presented for support. The vision rehabilitation process was explained as an ongoing relationship.

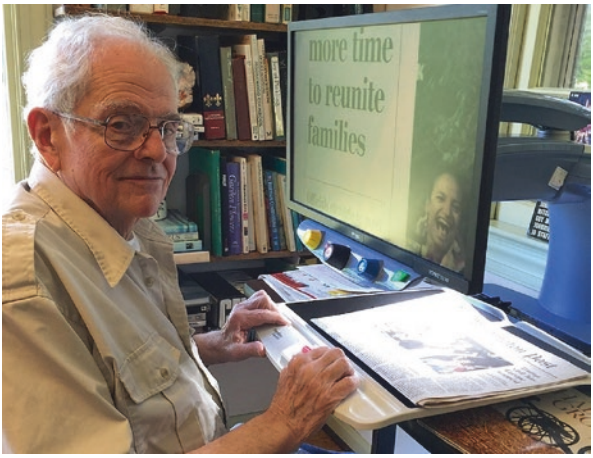

Fig. 2 Low-vision aids being demonstrated (in this instance a closed-circuit television)

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