

Hearing Loss in Palliative Care

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Abstract

Background: Age-related hearing loss is remarkably common, affecting more than 60% of adults over the age of 75. Moreover, hearing loss has detrimental effects on quality of life and communication, outcomes that are central to palliative care. Despite its high prevalence, there is remarkably little written on the impact of hearing loss in the palliative care literature.

Objective: The objective was to emphasize its importance and the need for further study. We use a case as a springboard for discussing what is known and unknown about the epidemiology, presentation, screening methodologies, and treatment strategies for age-related hearing loss in palliative care.

Discussion: The case describes a 65-year-old man with acute myelogenous leukemia (AML) that has progressed despite treatment. No concerns are raised about communication challenges during conversations between the palliative care team and the patient in his quiet room. However, in the midst of a family meeting, shortly after discussing prognosis, the patient reports that he cannot hear what anyone is saying.

Conclusion: We describe simple methods of screening patients for hearing loss, and suggest that practical approaches should be used universally in patient encounters. These include facing the patient, pitching one's voice low, using a pocket talker, and creating a hearing-friendly environment when planning a family or group meeting.

Case Presentation

THE PATIENT WAS A 65-YEAR-OLD MAN admitted to the hospital for induction chemotherapy to eliminate acute myelogenous leukemia (AML) from his bone marrow, because a bone marrow assessment had revealed near complete replacement of normal bone marrow with leukemic cells. As usual, transfusions of red blood cells and platelets were required following the chemotherapy. However, complications ensued. He developed an autoimmune hemolytic anemia—his body began to produce antibodies that rapidly destroyed the red blood cells and platelets in the transfusion. This necessitated daily transfusions to maintain life-sustaining levels of red blood cells and platelets. Then he developed a fever, a particularly concerning problem, as the chemotherapy had eradicated most of his white blood cells, leaving him vulnerable to massive infections. Blood cultures revealed a persistent bacteremia, possibly related to an intravenous port, a foreign body that was likely infected with bacteria. At this point a palliative care consult was called to assist with goals of care discussions in a patient with life-threatening illness.

At the initial consult visit the patient expressed concern about his prognosis. While he appeared “down,” he did not

seem hopeless or helpless. The consulting palliative care team visited him daily for the ensuing week, helping him grapple with what it means to have a life-threatening illness, yet still have realistic hope (according to his oncologists) for a complete cure. The patient was situated in a private room, with the door closed to minimize the risk of infectious complications. At no point during conversations with the palliative care team was there any indication that communication was compromised.

The patient lived with his wife and cats. The wife was still working and communicated with the team primarily via phone. Over the course of several calls from the palliative care fellow, she expressed frustration with communication about medical decisions involving her husband. She expressed that she did not have a good sense of his prognosis, and the patient and his wife requested that she be more involved in medical decisions. At the suggestion of the palliative care team, the primary medical team convened a family meeting.

The family meeting was held in a large conference room to accommodate the patient; his wife; the primary team (attending, resident, intern, medical student); the palliative care team (attending, fellow); the oncology team (attending,

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fellow); and the infectious disease team (attending, fellow). The meeting was facilitated by the oncology fellow, as agreed upon in a pre-meeting. During the agenda-setting portion of the meeting, the patient's wife asked for an honest sense of her husband's prognosis. The oncology attending and fellow described in detail the possible outcomes of the induction chemotherapy, including a return of normal cells, a return of leukemic cells, or no return of any cells (i.e., aplastic anemia). They stated that they were optimistic that the normal cells might return, but would not know for another two weeks.

At this point, about a half hour into the meeting, the patient, who looked more withdrawn than usual, interrupted and said, "I can't hear what you're saying." The oncology fellow, a soft-spoken female, apologized. She began to repeat herself when the patient again interrupted and said, "And you're the worst. I can't hear you at all. I think I'm dying, can any of you tell me if I'm dying?" The male primary team attending then moved his chair closer to the patient and shouted in his ear, "I don't know. I think you have a chance of making it. We need another two weeks to know for sure." The patient nodded and put his head down. His head remained down for the rest of the meeting as his wife and the team made a number of decisions about his care.

Discussion

We conducted a literature search using PubMed and the words "hearing loss" and "palliative" or "hospice." We excluded articles that clearly focused on palliative treatments for congenital conditions and tumors in children that cause hearing loss, resulting in four articles.¹⁻⁴ One of the four was a fictitious story about the end of Beethoven's life (Beethoven became deaf in late life).⁴

What is known, however, is that age-related hearing loss is common. Several recent reviews report between 20% and 40% of people aged 50 and over experience hearing loss, more than 63% of those over 70, and over 80% of those over 80.^{5,6} (For clinicians looking for an easy to recall statistic, we suggest remembering that 80% of adults over age 80 will have hearing loss.) On a population basis, this represents 20 million adults over the age of 70, rising to 34 million by 2030 and 41 million by 2050.⁷ Denial is an important component of the hearing loss experience. Only about 20% of adults over age 65 consider themselves to be hearing impaired, suggesting that there are strong sociocultural reasons to avoid being labeled as hearing impaired or deaf.⁸⁻¹⁰ However, age-related hearing loss is also silent—it usually comes on slowly, so individuals are often unaware of the environmental sounds and communication they no longer experience.

While the prevalence of hearing loss in populations served by palliative care and hospice is unknown, it is unlikely to be less than the prevalence in the general population and may be higher because of the use of ototoxic medications in this population.¹¹ Furthermore, while the prevalence of hearing loss in caregivers of adult patients is also unknown, we have heard anecdotal reports of caregivers misunderstanding hospice instructions due to hearing loss.^{12,13} Furthermore, in very elderly patients and caregivers hearing loss must be taken in the context of the patient. Very elderly patients tend to have multiple chronic conditions, physical disability, diminished eyesight, and cognitive impairment. Although

hearing loss may not be the primary focus or concern, each of these other conditions has the potential to amplify its impact on the patient experience.¹⁴⁻¹⁷

Hearing loss has profound implications for patients. In addition to negative impacts on quality of life, hearing loss detrimentally impacts communication and is related to depression and diminished functional ability.^{14,15,18} These outcomes are all core concerns in the practice of palliative care. Further, hearing loss may lead to misunderstandings between the patient and provider.

In our case presentation the lack of recognition of the patient's hearing loss led to a missed opportunity for the patient to understand important prognostic information delivered during the family meeting. What he did hear was an unnuanced, decontextualized statement of his condition. Prior to the family meeting there was little reason to suspect that the patient had hearing loss. He was slightly on the younger side of old age, where hearing loss is less prevalent. In addition, face-to-face communication in his quiet room, one of the most ideal settings for communication, had proceeded without any concern for hearing loss. In retrospect, however, we cannot be totally assured that he was not misunderstanding what was communicated. It was the family meeting, where the patient was in a large echoing room with significant ambient noise and separated from the speaker by more than 10 feet, that the problem surfaced. To prevent such "missed" diagnoses, should palliative care clinicians routinely screen for hearing loss?

Although data are limited, screening rates for hearing loss are poor in primary care settings with reported averages of less than 20%.¹⁹⁻²¹ Further, there are no national guidelines related to screening for hearing loss in any setting. After an updated review of the literature, the U.S. Preventive Services Task Force (USPSTF) noted that there was not enough data to recommend routine screening for persons who did not have complaints.²² Lack of available data, however, does not mean screening would not be beneficial. Bagai and colleagues recommend screening using a single-item question along with a whisper test.²³ A positive result for either suggest a referral would be beneficial. Instead of the whisper test, which can be influenced by an individual's voice frequency and inability to truly whisper, the finger rub may be a valuable screening strategy.

Using this approach, the patient is asked, "Do you have difficulty hearing?" A "yes" to this question is considered a positive screen. However, given many individuals deny or aren't aware of their hearing loss, a brief objective test should be included. To perform the finger rub test, first demonstrate what you will be doing and assure the patient can hear what they should be listening for. The thumb and middle finger should be vigorously (almost a snap) rubbed together. Then stand behind the patient with arms stretched out to the sides (70 cm from both ears). The patient is asked to close his or her eyes and indicate when hearing the demonstrated sound and on which side of the head. The clinician then varies the side on which the finger rub is performed. If the patient does not hear the finger rub the first time in an ear, a repeat of the finger rub is done. If they again don't hear the sound, the screen is positive for possible hearing loss. If they do hear the sound the second time, the finger rub is repeated a third time. Failure to correctly identify the correct side two of three times is a positive test.

Ideally, a positive response to the question about hearing loss or the finger rub test should be followed by more formal audiometric evaluation. However, formal testing can be difficult; may not be in line with goals for patients very near to the end of life and/or those in a hospitalized setting, such as the patient in our case; and may not be necessary to address the communication problem experienced. Providers should examine for common causes of hearing loss in the elderly. Most cases of hearing loss in the older adult will be due to presbycusis, or age-related hearing loss. However, in some cases hearing loss may be completely or partially due to cerumen (ear wax) impaction, a reversible cause that can be rapidly diagnosed and treated.

Hearing aids are the most common treatment for age-related hearing loss. In one landmark study of 188 older adults randomized to receive a hearing aid or placed on a wait list, those randomized to receive the hearing aid had documented improvement in social and emotional function, communication function, and depression compared to those in the wait list group.²⁴ Unfortunately, hearing aids are not the answer for all patients, particularly in palliative care populations. First, only about 25% of older adults who are eligible for hearing aids acquire them.¹⁰ Second, hearing aids are expensive, with costs running in the \$2,000–\$3,000 range for one hearing aid. Third, of those who have hearing aids, 30% do not use them.^{10,25} Anecdotally, we have heard reports that patients are asked to not bring their hearing aids to the hospital so they will not be lost. Finally, hearing aids require months to obtain and get adjusted appropriately, and it takes time for individuals to adapt to hearing sounds they may not have heard in a long time. Palliative care patients may not have the resources to purchase hearing aids, nor the time to acquire and learn to use them. Nonetheless, for patients with a prognosis of longer than two to three months whose goals align with testing and fitting for hearing aids, a referral to an audiologist or speech-language pathologist can help identify the best adaptive device.

Fortunately, there are some more practical options (see Table 1).²⁶ First and foremost, however, is to recognize the impact of hearing loss on the individual while not assuming that this impairs decision making capacity. Once hearing loss

is recognized, the first option is to use effective communication strategies. If an individual has a preferred way of communicating, this should be elicited and used.²⁷ The room should be as quiet as possible with the door shut and TV turned off. Patients with hearing loss often rely on visual information, or “speech reading,” to augment their diminished sense of hearing; so the speaker should face the individuals and sit fairly close, while cognizant of their culturally based space needs. While the attending’s shouting in the case example was well intentioned, shouting paradoxically can be detrimental to communication, as shouting often leads to people raising the pitch of their voice and leaning forward in a manner that eliminates the visual aid of “lip reading” relied on by the patient. Most helpful is pitching one’s voice low, as high-frequency sounds are usually first to go in age-related hearing loss, whereas lower-pitched sounds are relatively preserved. Enunciate but don’t overdo mouth movements. If asked to repeat, rephrasing rather than repeating may be helpful.

One approach that should be universally employed in palliative care is the teach-back method of checking for understanding. In teach-back, the provider asks the patient to teach back to them what they just discussed. We recommend placing the onus of responsibility for clear communication on the provider, rather than coming across as “testing” the patient. For example, a provider could say, “So that I know I have done a good job of explaining, can you tell me what your understanding is of what we just discussed?”²⁸ The teach-back method ensures that good communication has taken place across a whole host of potential barriers, not only hearing loss, but also health literacy, limited language proficiency, and psychological factors such as denial.

Another strategy is to use a small amplification device, or so-called pocket talker. These are available in some hospital settings, in stores such as Radio Shack or Best Buy, and online through companies that focus on assistive listening devices. The cost ranges from about \$20 to \$150, although more advanced devices may cost more. The basic device includes a microphone unit with volume control and a set of headphones for the patient. For one-on-one conversation, the speaker can talk directly into the microphone. For larger

TABLE 1. PRACTICAL TIPS FOR PROVIDERS OF OLDER ADULTS WITH HEARING LOSS²⁶

| <i>Domain</i> | <i>Do</i> | <i>Don't</i> |
|---------------|---|---|
| Setting | Ensure good lighting—patient can see your face and read your lips (“speech reading”) Invite a non-hearing impaired caregiver | Poor lighting—cannot read lips Assume the patient does not need support |
| Positioning | Sit in front of patient so they can read your lips | Speak to caregiver rather than patient—patient cannot read your lips |
| Language | Pitch voice low—high frequency sounds are lost first Enunciate Rephrase—alternative phrasing may be easier to hear Use the teach-back approach | Shout—distorts sound and raises pitch Speak rapidly without pausing Repeat—this phrasing may be difficult to hear |
| Aids | Use visual aids and write things down Use technology such as pocket talkers | Assume the patient understands Rely exclusively on spoken communication Rely on voice alone when a simple amplification device could help |
| Documentation | Document effective communication strategies in the medical record for others to use | Find that something works or doesn’t work and not inform the next group of providers |

groups, such as family meetings, the volume can be increased and the microphone placed in the middle of the room. Other amplification devices can help with telephone conversations or email.²⁹ To our knowledge, the pocket talker has not been tested in geriatrics or palliative care. Anecdotally, we have had excellent success using the pocket talkers to communicate with hospitalized patients. In one such case, the primary team stated that they did not involve the patient in decision making because they believed he was delirious or demented. The consulting palliative care team placed a pocket talker on the patient's ears, resulting in a "miraculous" ability to communicate with the fully intact and partially deaf patient.

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