Family Practice Grand Rounds

Care of the Elderly, Demented, and Dying Patient

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DR. RICHARD B. SALMON *(Assistant Professor, Department of Family Medicine)*: Today we focus on the case of a demented, elderly man who became acutely ill and died in the hospital. Initially the patient was brought by his family for evaluation of his dementia to the University Hospitals Center for Assessment and Care of the Elderly (UHCACE), an ambulatory assessment unit that includes a family physician, a psychiatrist, an internist, a neurologist, a nurse clinician, and a social worker. The case illustrates several important themes in the care of demented, elderly patients: the value of a team approach oriented toward the family, the severity of adjustment and grief reactions, the decision to withhold extraordinary care, and the difficulty that the health care team experiences in caring for the patient. The case discussants include several members of the Center for Assessment and Care of the Elderly and Dr. Robert Kohn, a pathologist, who will discuss the implications of aging as a cause of death in the elderly.

Mr. M. was an 88-year-old white retired sheet-metal worker whose wife had recently died of pancreatic cancer after a short terminal illness. Mrs. M. had been successfully covering up Mr. M.'s deficiencies, and after her death the family became aware of an unsuspected degree of dementia in Mr. M. Although Mr. M. knew his intimate family members by name, he did not know most of the people at his wife's funeral. He had little awareness of her death and kept asking where she was. During this time his agitation increased, and his previous physician prescribed haloperidol in low doses. He was still able, for the most part, to care for himself. He spent his time either listening to the radio or watching television. Approximately two weeks before the evaluation process began, the family had placed him in a rest home for the elderly. He initially seemed to adjust well to that location and had started forming relationships with the staff.

His past medical history was significant for heart disease including congestive heart failure, atrial fibrillation, and chest pain for which he was treated with digoxin, isosorbide dinitrate, and hydrochlorothiazide without functional impairment. There was no history of alcohol or tobacco abuse, and the family history was negative for Alzheimer's disease. Physical examination revealed a well-developed, well-nourished white man who was cooperative and pleasant. His blood pressure was 145/92 mmHg and his heart rate was 82 beats/min. The cardiorespiratory examination revealed no signs of failure. The neurologic examination was without focal findings. Mental status examination showed that he did not know the day, date, year, current president of the United States, his address, or his age. He did know his birth date and that he was in a physician's office. He could remember two of three objects after two minutes. He knew how an apple and an orange were alike; however, he did not know how a car and a boat were alike. He could not add a penny, a nickel, and a dime, and he was concrete with his interpretations of proverbs.

During the examination he had an episode of nausea and diaphoresis lasting several minutes accompanied by new T-wave depressions in ECG leads II, III, aV_F, V_4, V_5, and V_6. The patient

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ELDERLY DYING PATIENT WITH DEMENTIA

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agreed to hospitalization, and after talking with his daughter, he was admitted to the Coronary Monitoring Unit. Serial enzymes, thyroid function tests, VDRL, B_{12}, and folate level were normal. An electroencephalogram (EEG) showed diffuse slowing without any focal findings. A computerized axial tomography (CT) scan was unsuccessful because of the patient's agitation. We concluded that Alzheimer's disease was the most likely cause of the dementia. Day by day he was less able to tolerate the acute hospital environment, and he was medicated with haloperidol with increasing frequency. A chest roentgenogram performed prior to discharge showed a right lower lobe infiltrate. Since he was afebrile and asymptomatic, he was treated with oral erythromycin.

On the patient's return to the rest home, the family thought that he did well initially. He repeatedly asked for his wife, and he was told that she had died. Eventually, his appetite decreased, and he became progressively more lethargic. In retrospect the family felt that this change correlated with his understanding his wife's death. Two weeks after discharge from the hospital, he was found to be poorly responsive and was readmitted.

Physical examination revealed a temperature of 39.9°C, a blood pressure of 150/80 mmHg, and bilateral rales. There were no other signs of congestive heart failure, and neurologic examination was without focal findings. Laboratory examination showed new elevations in the white blood cell count (WBC) ($14 \times 10^3/\mu L$ with 71 percent segmented cells and 20 percent band cells), BUN (53 mg/dL), and creatinine (1.7 mg/dL). The albumin was decreased (2.4 mg/dL) and the ECG was without change. Sputum examination revealed gram-negative rods and gram-positive cocci in chains. A spinal tap was negative, and a CT scan showed only atrophy. The portable chest roentgenogram showed increased densities in both lower lung fields consistent with infection or pulmonary edema. The patient was skin-test negative for tuberculosis, mumps, and candida.

Nafcillin and tobramycin were begun, and when the sputum culture grew Klebsiella, cefamandole was substituted. Because of the 80 percent mortality from gram-negative pneumonia in the elderly,[1] I warned the family that the patient was seriously ill. The daughter agreed that the patient was not to be resuscitated or electively transferred to an intensive care unit.

Mr. M. initially responded to rehydration and antibiotics with an improvement in mental status and a decrease in his BUN, creatinine, and white blood cell count. Because of inadequate oral intake, on the fifth day peripheral hyperalimentation was started. He continued to improve, and the family began the process of selecting a nursing home.

On the ninth hospital day Mr. M. pulled out six intravenous catheters. He was given cefamandole by intramuscular injection and extra efforts were made to encourage oral intake. By the 12th hospital day we became concerned because he continually called out for his wife, his oral intake was still poor, he had developed a sacral decubitis and a peripheral phlebitis, and his WBC had increased. Local therapy was begun for the decubitis and the phlebitis. The pulmonary consultant advised that Mr. M.'s persistent bilateral infiltrates were more likely due to heart failure than infection. Cefamandole was stopped and the dosage of isosorbide dinitrate was increased.

At this point the house staff questioned the appropriateness of continued active medical treatment of this depressed, demented patient. Also, they felt that antidepressant medication was urgently needed. I felt that we were obligated to take reasonable steps to find and treat infection, which might account for this patient's acute deterioration. I also felt that provision of a sitter for the patient during the day and eventual placement in a good nursing home were the main methods of treatment of Mr. M.'s adjustment reaction. I spoke with Mr. M.'s daughter daily at this point to include her in these decisions.

A private-duty nurse was hired, and the patient began to improve. By the 18th hospital day he recognized his daughter and was able to joke with her. Discharge to a nursing home was again anticipated. However, on the 21st hospital day he became more lethargic. By the 24th hospital day he was responsive to pain only, his weight had decreased, and his WBC had increased. His chest x-ray examination results had not changed. At that time the patient clearly suffered from multiple system failure (brain, lung, heart, renal, immune), all of which had deteriorated despite a substantial period of reasonable care. After consulting his daughter, we therefore decided not to actively intervene. The patient died that day.

I interviewed the daughter two months later, and she stated that in retrospect, she felt Mr. M.'s overall deterioration started when he realized his wife had died. Also, she felt she would have been happier if we had been less aggressive with his treatment.

DR. LAWRENCE BRESLAU *(Associate Professor, Department of Psychiatry)*: This is an instructive case because of the controversial issues it raises in the care of patients with Alzheimer's disease. Generally, at the time of their initial presentation, patients with Alzheimer's disease are mostly concerned with their memory loss and their relationships with other people. They may seek help from their own physician, a social worker, or the Alzheimer's Society. Some work is necessary at this point to make a correct diagnosis, to educate the patient and family, and to help them to establish a stable care system. The family begins to behave differently toward the patient by being more available and by better understanding the patient's needs. In turn, the patient is comforted and reassured by the care system.

Ultimately a second crisis develops when some alteration occurs in the ability of the care system to meet the patient's needs. For example, the patient's disability may grow beyond the capabilities of the care system either because of the natural progression of his disease or because of a superimposed acute brain syndrome resulting from such things as toxicity of medications, infections, or fluid and electrolyte disorders. In another example, as in this case, a member of the care system is no longer available because of illness, death, or other commitments. Under these circumstances the patient may develop any number of psychiatric symptoms depending as much on the character of the patient as on the precipitating event or the extent of memory loss. Those symptoms range from depression to paranoia or a confusional state that is due to the marginal function of the cerebral cortex. The patient is frequently hospitalized because of these symptoms. At that time, the patient is seen by the hospital staff through a "clinical window," which may not adequately allow preceding events to become visible. An understanding of what has happened depends largely upon understanding what has happened to the patient's care system over the long term. This case illustrated this point nicely. This patient became depressed not because his wife died, but because his care system fell apart. At this point, the issue of who was to care for him was much more important

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than the loss of a loving relationship. His wife died and he was placed in an inadequately staffed rest home.

MS. INA POWELL *(Nurse Clinician, Department of Family Medicine)*: I visited the rest home and found Mr. M. immobile in a chair in the corner. No one was available with the expertise to help him with his physical or emotional problems. Although the family visited him, I think that he perceived them as saying, "We don't care enough to have you in a place where you would receive excellent care."

DR. BRESLAU: The radical change in his care system caused him to become anxious and depressed. This concept guides the decision concerning use of antidepressant medication. Antidepressants may cause cardiotoxicity and confusion and may have limited efficacy; therefore, in this case, the appropriate course was to increase his care in the hospital by hiring a private-duty nurse and to work toward eventual placement in a high-quality nursing home.

AUDIENCE PHYSICIAN: I always feel somewhat reticent about being aggressive and preserving a man whose family is making clear signals that they are not interested. I don't know if that is a fair conclusion, but being left in the corner of a nursing home does not seem appealing.

DR. BRESLAU: It's often hard to be convinced, but a patient such as this man may get better in a week or two and live another ten years. Many significantly demented patients do require long-term nursing home placement. Placement is not necessarily catastrophic. There are many people in nursing homes whose families still enjoy them and they still enjoy their families. Both the patient and the family often require intensive professional support. When one speaks legitimately about letting a patient die, I think one speaks about someone whose quality of life is very much worse than the patients one sees under these circumstances.

DR. ROBERT KOHN *(Professor, Department of Pathology)*: In terms of debility and disease, this is quite a classic case. I would disagree with Dr. Breslau somewhat, although I qualify my disagreement with the knowledge that anytime we make a judgment about an individual on the basis of statistics, we are taking a chance. I think that an 88-year-old man with this history has probably

reached the end of his life. As his signs and symptoms evolved, I think it was clear that he was going to die. We may not always be able to predict the death-precipitating mechanism, but that probably isn't so important as the family dynamics. I am led to this conclusion by my findings from a recent review of autopsies on 20 persons over 85 years of age that I will describe.[2] First, however, I would like to make some general comments about the aging process.

Aging is a normal process, occurring in all members of the population; it is progressive and irreversible. There are three categories of age-related diseases. First are diseases that are aging processes themselves. The best example is atherosclerosis, which plays a role in disease of the heart, blood vessels, central nervous system, and kidneys. Other examples are osteoarthritis, emphysema, and osteoporosis. A second category of age-related disease consists of those diseases in which the incidence increases with age, such as hypertension. Deaths that are due to hypertension increase with age in a manner that parallels the increase in death due to all causes. This parallelism makes it appear that hypertension is an aging process in the American population. There are individuals, however, who never become hypertensive. The disease therefore lacks the inevitability of an aging process. Many neoplastic diseases are in this category. A third category of age-related diseases includes those diseases that are characterized not by universality or by increasing incidence in age, but rather by an increasing inability with age of the afflicted person to recover from them. Here we consider groups of physiologic insults that cause death in older people but have only minor consequences in younger people. Today's case is a perfect example. Pneumonia resulted in Mr. M.'s death, whereas a younger person might not even have been hospitalized. As individuals age, they can't react to stresses in the way they could at a younger age.

If we look at deaths per 100,000 as a function of age, the probability of dying doubles about every eight years after growth stops. If there were no deaths resulting from either cancer or atherosclerosis, there would be an increase of only about ten years' life expectancy at birth. Major causes of death would then be pneumonia and accidents.

DR. SALMON: Does the accident category include people who die after hip fractures?

DR. KOHN: Yes, and that question illustrates a central problem. A typical case is an elderly woman who breaks her hip because of osteoporosis. She is hospitalized and ends up dying from pneumonia. Our vital statistics are unreliable because the physician has no clear guidelines on what to record on the death certificate.

The vital statistics do indicate that the peak rate for the major causes of death in white women, for example, is consistently around the age of 88 years, even though the causes of death are not directly related to each other. This information suggests to me that everyone has a fatal disease called aging, and what is listed on the death certificate is often a complication of aging rather than a primary disease process.

To pursue this suggestion further, and as the vital statistics (based on death certificates) are often unreliable, I reviewed the autopsy findings from 200 persons who had died after they reached the age of 85 years. I asked, "What was the cause of death in these people that would have caused death in a middle-aged person?" No acceptable cause of death was found in about 30 percent of the cases. Many of these people died, therefore, because every physiologic process concerned with the maintenance of homeostasis drops off in a roughly linear fashion after growth stops.[3] As humans age, the ability to react to physiologic insults decreases to a level at which life cannot be maintained in the face of rather trivial tissue injury.

Before applying this concept to individuals, we must remember that at each age there is a broad range of physiologic capacity. Nonetheless, it appears in the case of Mr. M. that he could not defend himself against infection. The issue of how far to push medical care in an individual case is a complex one. Many of the diseases of old people are treatable or otherwise modifiable; moreover, each physician must be aware of whether he is really doing something that will help the patient or something that will just make the physician feel better while making the patient and the patient's family miserable. I can't help wondering whether Mr. M. might not have been better off if he had never gone into a hospital, and, instead, had died at home surrounded by his loved ones a week or two earlier.

MS. POWELL: Often at the University Hospitals Center for Assessment and Care of the Elderly, families complain of just the opposite trend. They feel their previous physicians have not paid enough attention to their elderly family member

with dementia and other disabilities. The family has been told that the problems are due to "old age," with the implication that nothing can be done. While often there is no cure, there are frequently many appropriate treatments for these problems.

DR. AMASA B. FORD *(Associate Chairman, Department of Epidemiology and Community Health)*: I came into contact with this patient about 24 hours before he died. At that time, it was clear we were dealing with someone in the process of dying.

Physicians have had very complicated relationships with death over many years. The tendency to say that this problem has fundamentally changed its complexion with modern increase in medical technology may not be accurate. Dr. Alfred Worcester[4] wrote three essays in the 1930s entitled "The Care of the Aged," "The Care of the Dying" and "The Care of the Dead." He gave a very detailed description of the physical and psychological aspects of the dying patient. He pointed out, for example, that while the dying patient often feels cold to the touch, the patient does not express being cold; therefore, efforts to warm the patient are misguided. His essays are thoughtful and largely applicable today, although they were written more than 50 years ago.

Dame Cicely Saunders,[5] a British physician, founded St. Christopher's Hospice in 1967. This hospice was the first devoted to the care of the dying patient. She has now gone beyond the idea of an institution for the care of the dying and fully supports the home hospice care concept that is beginning to spread in the United States. She believes that well-organized home care strongly supported by the family and other willing caretakers is the proper direction for the hospice movement to grow.

Although Dr. Balfour Mount,[6] Director of the Palliative Care Unit of the Royal Victoria Hospital in Montreal, is an expert in pain control, he promotes the concept of a multidisciplinary team approach with both hospital ward and home visiting teams. He points out the need for the psychological, emotional, and spiritual care of the patient and the family as a unit.

I bring these people to your attention to illustrate the movement in medicine to help health care providers confront their own feelings about the care of the dying patient and to learn to be comfortable and competent in caring for such patients. At the right moment, we must not evade the necessity of shifting goals from saving the patient to seeing the patient through his final crisis. This decision should not be based on age alone; it must be founded on a thoroughly balanced evaluation of the patient.

MS. POWELL: Dr. Ford, at what time after the death of a patient do you suggest meeting with the family?

DR. FORD: One or two months. Around the time of the death there is much confusion. About six weeks later reality hits the family. How is Mr. M.'s daughter doing?

DR. SALMON: She is doing better now. With the rapid loss of both parents, she was depressed to the point of being unable to cope with her financial affairs. She is now socializing more and functioning better. I think it helped that she was well prepared for her father's death.

DR. DAVID SCHMIDT *(Director, Department of Family Practice, University Hospitals)*: I would like to comment on Mr. M.'s dying shortly after his wife's death. I wonder whether his death was due to the loss of a loved one or loss of a caretaker. The pattern is not so strong with the death of a caretaker. The mechanism could be founded on the immune system. Studies have shown that about eight weeks after a spouse's death, a subject's cellular immune response diminishes, which might put him at increased risk of infection.[7] In this case we know Mr. M. was anergic.

DR. SALMON: I would like to conclude by saying that by the day prior to Mr. M.'s death everyone on the health care team and the family knew his death was inevitable. Whether that realization should have come earlier in his clinical course is subject to debate. However, everyone is in agreement that such assessments must not be avoided. Appropriate decisions must be made with the health care team in consultation with the family.

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