

# Screening Mammograms in Alzheimer's Disease Patients

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## Abstract

Very little guidance exists to help clinicians and families decide whether mammograms are useful in elderly women with Alzheimer's Disease (AD). We present a case of a patient with moderate AD who had a positive mammogram and discuss the dilemma faced by the family and clinician in deciding what was best to do for the patient. In this case, the family opted for breast conserving surgery (BCS) followed by palliative care which brought up the question of whether screening was appropriate with this treatment goal in mind. We reviewed the literature on AD and breast cancer screening and summarize these findings in our discussion.

## Introduction

Alzheimer's Disease (AD) is the sixth leading cause of death in the United States with a current prevalence of about 5.4 million Americans and expected to rise to 16 million by the year 2050. In 2011, nearly \$183 billion was spent on health care, long term care, and hospice care costs for people

with AD and other dementias.<sup>1</sup> Few articles exist that help guide clinicians on whether screening mammograms would benefit patients with AD. We present the case of a patient with moderate AD who continued to receive mammograms and the lesson learned from this case when it became evident that the family did not want aggressive treatment of the patient's cancer.

## Case presentation

An 82-year-old female presented with memory loss at age 75 and her mini-mental status at that time was 29/30 (normal 26-30). She had a gradual loss of memory over the ensuing 7 years and was diagnosed with AD. At age 82 she was ambulating without assistance and, aside from a history of osteoporosis, she had no other medical problems. She continued to have regular preventive care including yearly mammograms, but a dilemma arose when her mammogram showed a 14 mm lesion in the left breast highly suspicious for cancer. Unfortunately, her memory had declined to a mini-mental status score of 19 consistent with moderate dementia and she was unable to make decisions for herself. After discussion with the family, the patient was referred to a surgeon and a lumpectomy

was performed which revealed a 1.3 cm grade 1 infiltrating lobular carcinoma that was completely excised. The tumor was ER positive, PR negative and Her2 negative. At this point the family decided not to put the patient through any more treatment. She lived two more years and over that time had a gradual decline in her functional status and memory, eventually becoming bedfast and requiring nursing home care before she died.

## Discussion

This 82-year-old patient with moderate AD continued to receive breast cancer screening which may not have been appropriate. Some may argue that even healthy 82-year-old women should not receive breast cancer screening. The US Preventive Services Task Force (USPSTF) concluded that evidence as to whether breast cancer screening for women 75 years or older has any benefit is lacking since randomized controlled trials of breast cancer screening did not include this age group.<sup>2</sup> The American Geriatric Society Clinical Practice Committee recommends biennial or every three year screening for women over age 75 years as long as their life expectancy is at least four years.<sup>3</sup> The Cochrane review analysis of

## Objectives

*After reading this paper the reader will be able*

1. To state the evidence for breast cancer screening in the elderly patient.
2. To discuss the ethical dilemma of screening mammograms in the Alzheimer's patient.
3. To formulate a plan to follow the breast cancer screening needs of the patient with dementia.
4. To decide which of their patients with dementia might benefit from screening mammograms.
5. To be aware of treatment issues of early stage breast cancer in patients with dementia.

seven randomized trials comparing screening mammography versus no screening revealed three well designed trials which did not show any significant decrease in breast cancer mortality and four less optimally designed trials showing a significant decrease in breast cancer mortality.<sup>4</sup> The overall evidence for a benefit of screening mammography in women over age 75 is not clear.

The ethical dilemma of whether or not to recommend screening mammography among AD patients has been discussed by Raik et al.<sup>5</sup> They considered the benefits such as improved survival from early detection and treatment, and reassurance of negative examination, which will possibly benefit mildly impaired patients, but not moderately or severely demented patients who may not understand the reassurance of a negative scan.

The burdens of mammography can be due to overdiagnosis with false positive screening results leading to diagnostic mammograms and biopsies or overtreatment of premalignant conditions such as ductal carcinoma in situ. Additional harm may occur from subjecting cognitively impaired patients to a procedure that they do not understand. Raik et al suggested withholding screening mammography for patients with advanced dementia, significant comorbidity, or a life expectancy of less than 5 years. However, patients with mild dementia who may have the capability to understand benefits and harms should be given the opportunity to decide for themselves about screening after a discussion with their primary care provider.

When considering breast cancer screening in patients with AD, the

goals of care for the individual patient should be discussed. Goals of care have been classified by Sachs into prolongation of life, some limitations on life prolonging treatment weighing treatment benefits and burdens, and palliation.<sup>6</sup> Although for most people, including many AD patients, life prolongation is the major goal, this may change as the disease progresses. Cassel suggested that a good rule to follow would be that if surgery would be performed should a lump be discovered then mammography should be continued.<sup>7</sup> A study about the importance of screening for breast cancer involving 23 caregivers of women with dementia revealed that most caregivers of women with mild to moderate dementia have the intent to continue screening, while caregivers of women with severe dementia did not perceive screening

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as important.<sup>8</sup> Moreover, similar to the family in our case, their opinions on appropriate treatment if the patient with AD developed breast cancer was toward non-aggressive or comfort care. Unfortunately, families often schedule the mammogram without discussing it first with the primary care provider. In order to avoid being surprised with the dilemma of dealing with an abnormal mammogram in a patient with AD whose goal is palliation, preemptive discussion about the appropriateness of continuing screening mammography needs to take place at least annually.

Older women with a life expectancy of less than five years are less likely to benefit from screening mammography. A study of the impact of cognitive impairment on screening mammography found that although women with severe cognitive impairment have a lower rate of mammogram utilization compared to women without cognitive impairment, an estimated 120,000 screening mammograms were performed among women with severe cognitive impairment, a group with a median survival of just 3.3 years.<sup>9</sup> This represents a use of medical resources that may not be having much benefit. Larson et al<sup>10</sup> showed that unsteady gait, wandering, incontinence of urine, low score on mini-mental status exam at presentation or drop of 5 points in first year, and pre-existing heart disease or diabetes predict shorter life expectancy among patients with AD. Physicians need to be aware of factors causing shortened survival in AD so they can better advise their patients and families on the merits of breast cancer screening.

Our patient's family opted for breast conserving surgery (BCS) alone as treatment for her early stage breast cancer. This is a fairly common

choice according to a cohort study of 50,460 breast cancer patients of whom 1,935 patients had a diagnosis of AD which concluded that women with AD more often chose BCS than those without AD.<sup>11</sup> Moreover, the AD patients were less likely to receive any treatment for their breast cancer.

Different treatment modalities among patients over age 70 years with early stage breast cancer have been discussed by the International Society of Geriatric Oncology.<sup>12</sup> BCS is currently preferred over mastectomy especially in the elderly as it may lead to a better quality of life with no difference in overall survival or disease-free survival compared to total mastectomy, however local recurrence is increased with BCS alone. Radiotherapy reduces local recurrence rate, however, there is controversy in its overall survival benefits. Patient's health status, functional capacity, comorbidities, and risk of local recurrence should be considered before offering radiotherapy. Adjuvant hormonal therapy with either tamoxifen or aromatase inhibitors typically will benefit older patients with hormone sensitive breast cancers. The decision to give adjuvant chemotherapy should include consideration of absolute benefits, individual patient tolerance, life expectancy, and other comorbidities.<sup>11</sup>

In conclusion, screening mammograms should not be used in severely demented patients. Those with mild or moderate AD should decide about screening based on comorbidities, life expectancy, and intent to treat the cancer once discovered. Healthcare providers of patients with AD should have periodic discussions regarding the appropriateness of screening mammograms as the disease progresses and goals of care change.



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## CME POST-TEST

37. Regarding the evidence for screening mammograms for women over age 75 years:
  - a. The USPSTF states that screening is definitely indicated and supported by evidence.
  - b. The American Geriatrics Society states that mammograms could be offered every 2-3 years in the elderly with at least 4 years of life expectancy.
  - c. Most clinical trials of screening mammography included women over age 75.
  - d. The best designed clinical trials showed a decrease in breast cancer mortality.
38. According to Raik et al, which of the following was appropriate:
  - a. Mammograms should be withheld from patients with less than 10 years life expectancy
  - b. Patients with mild to moderate dementia would not benefit from screening mammograms
  - c. Patients with severe dementia would not benefit from reassurance of a negative exam.
  - d. One of the burdens of mammography is the cost to the patient.
39. Regarding treatment of breast cancer in Alzheimer's disease
  - a. Total mastectomy is preferred by most patients.
  - b. Radiation therapy helps prevent distant metastasis.
  - c. Hormonal therapies are rarely used in the elderly.
  - d. Breast conserving therapy for early stage disease has no difference in survival compared to total mastectomy.



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