Chapter 17
A Case of Alzheimer's Dementia in Uganda

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Abstract Literature on the prevalence of dementia and its different types in Uganda is scanty. In the Ugandan clinical setting, in addition to Alzheimer's disease and the vascular dementias, the other common causes of dementia include infections (commonly HIV and Syphilis), substance abuse (alcohol), trauma (road traffic accidents) and nutritional deficiencies (vitamin B-12). Uganda has a population of about 35 million people, with life expectancy at birth of the total population is at 53.45 years, which puts her at 204th in the world. About 2.1 % of the total Ugandan population is over 65 % and 4.6 % is over 60. These figures are expected to rise, but as it is, the epidemiological data may not necessarily follow world trends due to the prevalence of other killer diseases notably HIV/AIDS. A Ugandan study found that 13.2 % of all elderly patients of >60 years admitted on non-psychiatric wards had dementia followed by depression as the two most common psychiatric diseases of the elderly. In keeping with WHO recommendations for Low and Middle Income Countries (LMIC) with young populations, the cut off age to be considered elderly is ≥60 years in Uganda. This chapter presents a case of Alzheimer's Dementia illustrating the challenges of care and management of this disease in a Ugandan African setting.

Keywords Alzheimer's disease • Dementia • Activities of daily living • Care • Behavioral and Psychological Symptoms of Dementia (BPSD) • Anticholinesterase inhibitors

Abbreviations

AD	Alzheimer's Disease
ADL	Activities of Daily Living
BPSD	Behavioral and Psychological Symptoms of Dementia
CT	Computerized Tomography
EKG/ECG	Electrocardiogram

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HIV	Human Immunodeficiency Virus
MMSE	Mini Mental State Examination
MRI	Magnetic Resonance Imaging
UBOS	Uganda Bureau of Statistics

Introduction

Dementia is a progressive impairment of cognitive functioning of the brain occurring in clear consciousness. It is a common manifestation of brain degeneration from a variety causes, but occurs mostly in old age. Dementia consists of a variety of symptoms that suggest chronic and widespread cognitive dysfunction. Global impairment of intellect is the essential feature, manifested as difficulty with memory, attention, thinking and comprehension. Other mental functions can often be affected, including personality, mood, judgment, perception and behavior [1]. All dementias have certain common elements that result in significant impairment in social or occupational functioning and cause a significant decline from a previous level of functioning. The disorder can be progressive or static, permanent or reversible. The reversibility of dementia is related to the underlying pathological condition and to the availability and application of effective treatment.

According to the 2002 World Health Organization report, the number of people with dementia worldwide is expected to double to 65.7 million in 2030 and more than triple to 115.4 million by 2050. This is partially explained by the general increase in life expectancy globally. More people are now expected to live beyond the age of 60. As it is, dementia unfortunately targets these demographics and therefore the projected increase in its prevalence is not at all unexpected.

The most common type of dementia is Alzheimer's dementia which accounts for 50–60 % of all dementias [1]. The second most common type of dementia is vascular dementia, which is causally related to cerebrovascular disease especially hypertension. Vascular dementias account for 15–30 % of all dementias. Vascular dementia is most common in persons between the ages of 60 and 70 and is more common in men than in women. Approximately 10–15 % of patients have coexisting vascular dementia and dementia of the Alzheimer's type, otherwise called mixed dementia [1].

Other causes of dementia each represent 1–5 % of all cases and they include head trauma, alcohol-related dementias and various movement disorder-related dementias, such as Huntington's disease and Parkinson's disease [1]. Because dementia is a fairly general syndrome, it has many causes, and clinicians must embark on a careful clinical workup of a patient with dementia to establish the cause.

The prevalence of dementia and its different types in Uganda is scanty. In the Ugandan clinical setting, in addition to Alzheimer's disease and the vascular dementias, the other common causes of dementia include infections (commonly HIV and Syphilis), substance abuse (alcohol), trauma (road traffic accidents) and nutritional deficiencies (vitamin B-12). Uganda has a population of about 35 million people,

with life expectancy at birth of the total population at 53.45 years, which puts her at 204th in the world [2]. About 2.1 % of the total Ugandan population is over 65 years old [3]. These figures are expected to rise, but as it is, the epidemiological data may not necessarily follow world trends. A Ugandan study found that 13.2 % of all elderly patients of >60 years admitted on non-psychiatric wards had dementia [4]. In keeping with WHO recommendations for Low and Middle Income Countries (LMIC) with young populations, the cut off age to be considered elderly is ≥60 years in Uganda.

Alzheimer's Disease (AD)

First described in 1907 in a 51-year-old woman by Professor Alois Alzheimer, Alzheimer's disease (AD) is one of the top ten leading causes of death in the United States [5]. It is the sixth leading cause of death among American adults, and the fifth leading cause of death for adults aged 65 years and older [5]. An estimated 5.4 million Americans have Alzheimer's disease. This number has doubled since 1980, and is expected to be as high as 16 million by 2050 [6]. In 2011, the total Medicare and Medicaid spending for individuals with AD was estimated at $130 billion [7].

Gender differences in the incidence rates of AD indicate women to have a higher risk of developing AD particularly in the population older than 85 years [8]. Conservative estimates suggest that 1 in 20 persons age 65 and older, 1 in 4 persons age 80 and older, and half of persons age 95 and older have Alzheimer's disease [9]. Thus after age of 65 years when the prevalence is 5 %, the prevalence of AD increases by 1 % for every year lived. In Africa, little has been done to estimate the prevalence of AD in the general population. In a study of elderly patients attending psychiatric services at Mulago National Referral hospital in Uganda, dementia was second to depression as the most common reason for seeking psychiatric care amongst the elderly [10].

Below is a case of Alzheimer's dementia that presented to the Uganda National referral Mulago Hospital Mental Health clinic on police request, following a land dispute.

Case Report of Alzheimer's Dementia

S.N. was a 69 year old Ugandan married man from Kampala district of Uganda. He worked as a Muslim cleric, who taught religious studies for a job. He had previously been a businessman before retiring into religious teaching. He was married with six wives and 25 children.

He presented to the Mental Health Clinic in Mulago Hospital on 12/3/2010 accompanied by his daughter, a psychiatric nurse, with complaints of forgetfulness for 1 year, signing land-sale documents he couldn't remember, and feeling sad for

more than 2 weeks. The history was taken collaterally from his daughter as he, himself, could not give a good account of himself.

In the previous 1 year before presentation to hospital, S.N. had become increasingly forgetful. This begun with forgetting such common things as names of people including his relatives, his children and close friends and it progressed to forgetting important religious events, including his dutiful religious recitation prayers, despite being an Islamic preacher. He often failed to pick his change from grocery stores, often left bought items behind in shops and was unable to calculate his money. S.N. was seen to have progressively worsened in his memory to the point that he transacted a sale of his land, relinquishing it together with its accompanying documents but later he neither remembered the sale nor the buyer and he denied having ever sold his land, prompting the buyer to report and file a court case against S.N. to the police. Three months prior to this consultation, S.N. was reported to have wandered away from home, got lost and failed to trace his way back home, only to be picked up by a good Samaritan who brought him back to his home.

S.N's previous psychiatric history was unremarkable, with no psychiatric illness whatsoever in the past nor any psychiatric admissions or treatments. He neither used alcohol nor drugs of abuse. He was physically healthy with no hypertension and no diabetes mellitus. He had no history of sudden falls or trauma to his head. He had no history of seizures or headaches.

He was married to six wives but currently three had left. He had 25 children but he would no longer identify them all. He had a son with bipolar affective disorder. There was no history of dementia in his family.

Prior to the onset of AD, S.N. was an outgoing, social, active religious person with many friends. He was described as hardworking and a successful businessman. His hobbies included visiting people and listening to radio for news and world happenings. He had only one previous history of involvement with the law in the land matter which had caused a dispute and this was the main reason police referred him for psychiatric assessment.

The initial Mental State Examination showed an elderly gentleman, dressed appropriately in traditional Ugandan attire (kanzu). He was well groomed and was in fairly good nutritional state. His speech was labored in search of words and he seemed to refer most of the questions to his daughter for answers. There was no thought disorder and no perceptual disturbances elicited. He was alert and fully conscious; however, he was disoriented in time, place and person. He could not sustain attention and his concentration was equally impaired. He had intact immediate registration in memory, but 5-min recall, intermediate, short term and long term memories were all impaired as he could not recall ideas discussed at the beginning of the interview, and recent and past events in the country did not seem to mean anything to him.

His judgment for safety, social and abstraction were all impaired as he could not clearly explain how to get out when faced with danger, could not maintain social etiquette and could not interpret simple and common proverbs. He lacked insight into his illness.

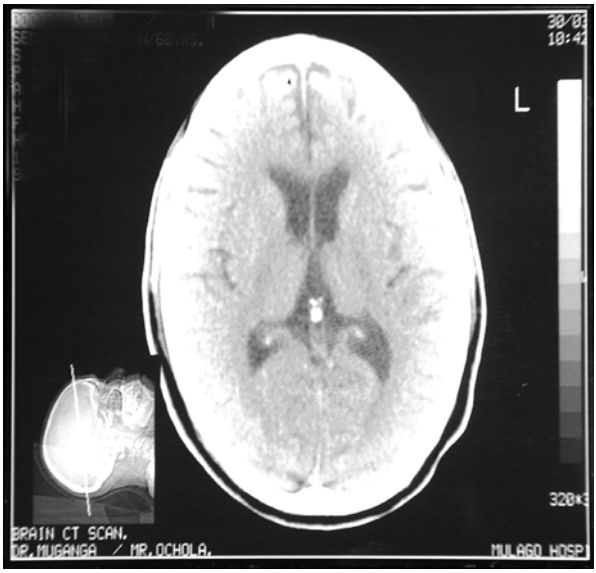

Fig. 17.1 Image of S.N.'s brain CT scan

Investigations included the Mini Mental Status Examination, MMSE, where he scored 9/30. He had negative serology for HIV and Syphilis. He had normal values for Complete Blood Count, serum vitamin B-12, liver, thyroid and renal function tests as well as normal lipid profile and cardiac function by echocardiography and EKG.

S.N.'s brain CT scan showed features suggestive of brain atrophy, most prominently in the fronto-temporal areas (Fig. 17.1). His brain CT Scan report read:

> The Lateral and 3rd ventricles are widened. The 4thVentricle is normal. The ambiens and basal cisterns are normal. The Sylvian fissures are prominent. The midbrain, cerebellum are normal There is sulcial widening of =11 mm. Features are suggestive of Brain Atrophy more marked in the Frontal and Temporal lobes.

A diagnosis of Alzheimer's dementia complicated by depression was made. S.N.'s biological management included administering the cholinesterase inhibitor Donepezil and the antidepressant Imipramine. Social management involved psychoeducation of the family about the nature of AD illness, its course and prognosis and how to care for him including Activities of Daily living (ADL)

At 1 month follow up S.N. reported improved sleep and mood and the antidepressant of Imipramine was later withdrawn after a few months. However, the memory was still impaired. He later developed behavioral and psychological symptoms of dementia (BPSD), which included wandering away from home, talking to himself, easily getting irritated and wanting to strike out. Risperidone was added to his treatment with good effect. Later memantine was added to the Donepezil as the two anti-dementia cholinesterase inhibitor drugs of choice in the maximum recommended dosages. However compliance with medication was a problem because of

the use of alternative herbal medicine as suggested by his relatives who were alarmed by his progressive deterioration. At his last clinic visit he had been off the prescribed drugs for 4 months, and his memory was grossly impaired. He was stammering grossly in his and his ADLs had deteriorated necessitating more assistance in his daily care. At times he would urinate in presence of his grandchildren and had to be assisted for dressing, although he could feed and bathe himself. S.N died 3 years after diagnosis of AD.

Discussion

This is a case of Alzheimer's dementia with typical clinical presentation. This patient reportedly developed symptoms at the age of 68 years which falls in the age range of onset of Alzheimer's disease. For over a year, impaired memory was his first symptom and it went on deteriorating. He delayed seeking medical attention because family members thought his memory problems were associated to normal aging. He was involved in a police case after selling his land and denied the purchaser to access it, yet he acknowledged receipt of money and even had the signed land documents. This made the family realize that he could be having a problem of memory and comprehension.

In a Ugandan clinical setting, like in all low income countries, there is a limitation on biological investigations. For example we could not do MRI-scans. Alzheimer's dementia is thus often a clinical diagnosis based on exclusion.

Legal complications often come in AD and often this poses legal wrangles for example whether this gentleman was in his rightful mind at the time he sold his land, or whether he was having a lucid interval. One usually has to rely on family understandings and agreements. In this case, the matter was resolved later between the family and the land purchaser who returned the money, and the family obtained their land.

In Africa, including Uganda, people have a culture of seeking alternative modes of treatment once they are diagnosed with chronic unrelenting illnesses with no medical cure. In this patient the family members resorted to use of traditional herbal medicine when they realized that their relative was diagnosed with an incurable disease. Sometimes, relatives often invoke witchcraft.

The cost and burden of care for AD can be staggering. In western countries, for example USA, over 15 million Americans provide unpaid care for persons with Alzheimer's disease or other dementias [7]. Such services, including Nursing homes for the aged, lack in developing countries. The unpaid caregivers are primarily family members, hence causing a heavy care burden to family and friends. However, traditional African cultural systems are fast disappearing and the extended family system has been extended to its limits due to changes to a cash economy and it no longer holds. Yet, there are no social or government agencies for the care of the old and demented. Thus in Uganda, as a country, care of the elderly demented is thus a challenge and it is mostly done by family just as this patient was being taken care of

by the daughter. Over 80 % of the care for the elderly demented is provided at home by family caregiver. Fewer than 10 % of older demented adults receive their care from paid workers [11]. Caring for a person with Alzheimer's dementia or other dementias is often very difficult, and many family and other unpaid caregivers experience high levels of emotional stress and depression. Time spent on caregiving often has a negative impact on health, employment, income and the family finances [12].

The good prognostic factors in this patient were there being no family history of dementia and no history of cardiovascular disease, hence rules out a possibility of mixed vascular and Alzheimer's dementia. He did not use alcohol or abuse drugs and he had the daughter's support.

The poor prognostic factors included early age of on set, poor adherence to prescribed treatment as the family preferred using traditional herbal medicine. The patient had no insight into his illness, had on and off Behavioral and Psychological Symptoms of Dementia and his memory was deteriorating fast. Thus overall, the prognosis was poor as happens in most cases of AD.

Conclusion

There is a need for health care professionals even in developing countries, to be trained in geriatrics. Old age is escalating, but with few healthcare providers. Geriatric services should be incorporated at all levels of health care. This calls for more research and funding in this growing area of medicine.

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