Nobody wants to have Alzheimer’s disease. Anyone who has watched AD rob people of their autonomy, personality and even their dignity knows that AD is something to be avoided. I guess it shouldn't be a surprise that only a minority of doctors share the diagnosis of AD with their patients.

The reasons for not telling are complicated and undoubtedly vary from one clinician to the next. Some withhold the diagnosis because of unfamiliarity with the criteria or uncertainty about the accuracy of their findings. For others, the silence stems from a fear that the person with AD might be provoked into depression by knowing or, conversely, doesn’t have the insight to understand what the information really means. For yet another cohort, the desire to spare the patient or the family the stigma of AD is the prevailing issue. Many patients fear—perhaps rightly, perhaps not—that such a diagnosis would jeopardize their medical insurance coverage and/or employment status. And family members, mindful of the hereditary component of AD, will frequently worry that they may one day suffer the same fate.

For many practitioners, euphemisms, generalities and misleading oversimplifications are the rule when it comes to sharing a diagnosis with patients and families. Of course, compassion often drives our desire to spare patients from learning the painful reality of a progressive, irreversible, debilitating and indeed dehumanizing disease, and we’re looking for an easy way out.

One way out of the truth-telling dilemma comes from an unanticipated place: the MRI scanner. The emergence of easily available magnetic resonance imaging has clouded the approach to dementia differential diagnosis by revealing a high prevalence of periventricular white matter (PVWM) disease in older adults. A diagnosis of stroke is less stigmatizing than one of AD in today’s society, so many clinicians are swayed by social pressures to diagnose dementia symptoms as the result of strokes rather than AD when PVWM disease is evident on the MRI.

Though done out of compassion, this is often medically inaccurate. PVWM changes on MRI are not necessarily observed on pathological exam, nor are they obligately associated with clinical signs. In fact, PVWM disease on MRI correlates more closely with age and presence of vascular risk factors than with cognitive state. PVWM lesions are seen in 70 to 90 percent of patients who meet research criteria for “vascular dementia” (VaD). Among AD patients with late onset dementia, however, the prevalence of PVWM change is similar, 70 to 80 percent.

The evidence therefore suggests that even when white matter disease is evident on imaging, AD is still the most likely diagnosis for patients presenting with progressive cognitive decline. Perhaps because of the frequency of PVWM in patients with AD, the prevalence of clinically diagnosed cases of VaD is two to three times higher than what is observed in autopsy series. Thus, although VaD is the second or third most common form of dementia, it is also probably the most overdiagnosed in clinical settings. Worse yet, this attempt at social compassion may be misguided. Evidence suggests that survival and treatment responsiveness are worse among patients with VaD than AD, so we may not be doing anyone a favor when we tell them they have VaD instead of AD.

**Vascular Dementia: Changing Names, Moving Targets**

Classification and understanding of dementia arising from cerebrovascular disease has long been a problem. Cerebral ischemia has been recognized as a primary cause of dementia dating back to Thomas Willis (of “Circle of Willis” fame) in the 1600s. Through much of the 20th century, the problem was conceptualized as cerebral atherosclerosis or “hardening of the arteries,” i.e., chronic cerebral oxygen deprivation resulting from progressive arterial stenoses. Many of our current patients grew up with that understanding of “senility.” A major rethinking was required when experimental evidence failed...
to find poor overall cerebral blood flow in demented people. Subsequently, the concept of “multi-infarct dementia” (MID) arose in the mid-1970s.

The central idea in the MID construct was that discrete cerebral infarctions or strokes were required for the development of dementia. When routine cross-sectional imaging emerged, it became clear that some patients were experiencing dementia, presumably of vascular origin, in the absence of discrete infarcts. These days, MID is considered a subtype of the broader categorization of vascular dementia. Because VaD is a newer term with a less descriptive name, MID and VaD are used synonymously by many physicians, without much consideration of the subtleties that distinguish them.

The true prevalence of VaD is unknown, but it has been estimated to affect more than one million people in the United States. VaD prevalence rapidly increases with age, doubling about every 5 years after age 60. The increasing prevalence with age closely parallels the prevalence patterns of AD in the same age groups, but with fewer total cases. Autopsy series from research centers suggest that VaD accounts for 10-15 percent of all dementias confirmed pathologically.4

There is a similar number of cases with both AD and significant ischemic disease. It is difficult to interpret the VaD literature, however, because there is no consensus regarding what pathological features are required to confirm post-mortem diagnosis of VaD or to say that the lesions are sufficient to contribute to the symptom pattern. Clinicoradiologic criteria have assisted in the research diagnosis of VaD, but they remain cumbersome for routine clinical use, and are unsupported by a pathological gold standard. Significant differences in their sensitivity and specificity prevent the formulation of a consensus from different studies.5

These observations support a major critique of the VaD construct. The critics say that current diagnostic approaches try to shoe-horn the highly variable clinical expression of stroke-related cognitive deficits into a syndromic criterion set based on the one for AD. The key difference between these disease states is that AD follows a predictable pattern of accumulating pathological burden and neurochemical change, but the size and location of strokes—and therefore the symptoms associated with them—vary considerably between patients. Perhaps as a result, the concept of VaD is now under reconsideration as a component of a broader spectrum of symptoms known as vascular cognitive impairment.6

The Circle Closes?

Perhaps the most surprising element in the AD-VaD conundrum is that some investigators are now arguing AD itself arises from vascular origins.7 They argue that the overlap in symptoms (especially memory loss), risk factors (such as hyperlipidemia and apolipoprotein E genotype), and functional imaging (hypoperfusion on isotope scans) mean that sporadic AD is, at its core, a vascular disorder. There are many holes in the argument from the behavioral neurologic perspective, such as viewing memory dysfunction and dementia as synonymous. The fact that deterministic mutations are associated with autosomal dominant early onset AD mandates that a vascular origin of AD is not universal. That goes on to raise the question of whether there is just one AD, but that’s a story for another time.

Nonetheless, the high prevalence of PVWM disease in older AD patients supports the idea that a vascular disorder causes or magnifies the pathologic expression of AD, at least in some cases.

Bottom Line

So, what about telling the truth to the person with AD? First, it seems like a lie, or at least a crutch, to say that strokes are the problem if my exam, including a well considered cognitive evaluation, doesn’t reveal evidence for clinically meaningful cerebrovascular disease. Certainly, it’s a paternalistic violation of the ethical foundations of modern medicine to lie to a patient who wants to know the truth.

If there is good evidence for cerebral infarctions, either on physical exam or imaging, then we need to manage that problem with secondary prevention. Since so many of my patients have cerebrovascular risk factors, I’m usually going to recommend a preventative approach to stroke anyway. As the literature points out, the presence of strokes does not imply the absence of AD. So, really, the MRI doesn’t change my practice all that much for these patients.

For all of these reasons, I usually tell people when they meet criteria for Alzheimer’s. I always provide this message in a compassionate, informed way, tailored to what I’ve learned about the affected person and their family. I take their wishes into account and I try to share the diagnosis at a level they can understand. It’s true that most of them don’t want to hear that they have Alzheimer’s disease, but I also know they didn’t come to hear me lie to them. PN