The objective of the study was to identify clinical features that distinguish patients with dementia with Lewy bodies (DLB), who were classified as Alzheimer’s disease (AD) patients, from patients with AD. We examined a group of 27 patients from our memory clinic, originally diagnosed with AD, of whom 6 were postmortem found to have DLB. For the present study, we compared cognitive, noncognitive and neurological symptoms between the two groups. We found that there were no differences on ratings of dementia and scales for activities of daily living. Patients with DLB performed better on the MMSE and the memory subtest of the CAMCOG, but there was no difference in any other cognitive domain. Furthermore, genetic risk factors, including family history of dementia or allele frequency of the apolipoprotein e4, did not discriminate between the two groups, and there were no differences on CCT scans. Taken together, our findings suggest that Lewy body pathology may be present in patients who do not show the typical clinical features which distinguish DLB from AD.