Unexpected brain MRI abnormalities in aging research studies

Howard A Rowley
University of Wisconsin, USA

Brain imaging studies are providing new insights into pathogenesis of Alzheimer’s disease and are being used as a biomarker for some clinical trials. Although performed primarily for research purposes, such scans may reveal a wide range of unexpected abnormalities in volunteers. At our center, we routinely send all MRI scans to a board-certified Neuroradiologist to assess for unexpected but potentially important abnormalities. Over the past 10 years we have prospectively reviewed 7812 MRI scans from volunteers referred from over 100 IRB-approved brain research studies. All scans are uploaded to a clinical radiology review platform and interpreted by Neuroradiologists using an on-line structured report. Research technologists and staff are also prospectively asked to document concerns discovered while scanning or processing. On most recent summary of our database, normal MRI results were found in 81% of scans, minor or expected changes were seen in 15%, and unexpected abnormalities prompting clinical referral were found in 4%. No correlations have been established between abnormal results and either gender or age. When volunteers were contacted regarding abnormal findings, they were almost universally grateful for the information, and opted for follow-up clinical evaluation. Potentially significant unexpected abnormalities in nearly 4% of subjects’ research brain MRI scans were found, only rarely accurately identified by research staff. Routine expert Radiologic review of all such scans can help facilitate clinical referral when indicated.

Biography

Howard A Rowley received his MA and MD degrees from Washington University in St. Louis, and completed multiple specialty training at the University of California, San Francisco. He is board-certified and active in the disciplines of Neurology, Radiology, and Neuroradiology. He is Chief of MRI for Neuroradiology at the University of Wisconsin, working closely with Medical Physics in the integration of new imaging techniques for clinical trials and practice. He has special interests in the areas of brain perfusion, gadolinium applications, and high resolution structural imaging as applied to aging, dementia, stroke, brain tumors, and trauma. He is incoming Vice President and President-Elect of the American Society of Neuroradiology.

hrowley@uwhealth.org