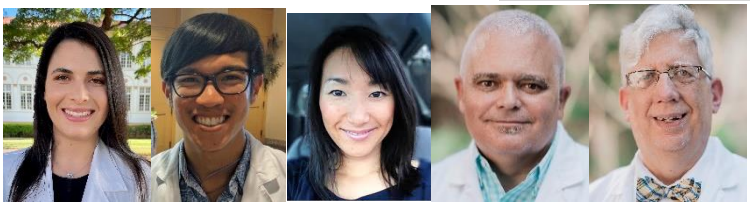
PubMed Full Length Publications



Correlation Between Intracranial Calcification and Extracranial Stenosis of the Internal Carotid Artery

Julia R Jahansooz 1 2, Andrew Ko 1 2, Ryoko Hiroi 1 2, Masako Matsunaga 3, Enrique Carrazana 1 2, Jason Viereck 2 3
1Neurology, John A. Burns School of Medicine, Honolulu, USA. 2Brain Research, Innovation & Translation Laboratory, Hawaii Pacific Neuroscience, Honolulu, USA. 3Quantitative Health Sciences, John A. Burns School of Medicine, Honolulu, USA.

Rationale: Intracranial artery calcification is a marker of vascular atherosclerosis and has a high prevalence worldwide. Both atherosclerosis of the internal carotid artery at the carotid sinus in the neck and intracranial calcification have been associated with ischemic stroke. The relationship between the two has not been well studied.

Methods: The present study investigated how carotid sinus narrowing could relate to calcification located in the distal intracranial artery at the cavernous carotid. We examined a population not selected for cerebral disease. This retrospective study contained 179 subjects aged 18 years and older from the Hawaii Diagnostic Radiology database. Extracranial internal carotid artery stenosis was determined using the absolute diameter, North American Symptomatic Carotid Endarterectomy Trial, and common carotid artery methods. Calcification was scored using the modified Woodcock method.

Results: A positive correlation between intracranial calcification and extracranial carotid stenosis was found using all three methods. Individuals with intracranial calcification were more likely to be older, have a smaller internal carotid artery diameter, and have a greater percent stenosis at the internal carotid artery than those without intracranial artery calcification ($p<0.001$ for all).

Conclusions: These results may help refocus interest in calcification in studies of cerebral vasculature and its correlation with extracranial carotid stenosis.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10332851/
Free Full text PMC

Other Recent Brain Research, Innovation, Translation Labs (BRITL) Publications