Medical Xpress

New research discovers gene that reduces risk of stroke

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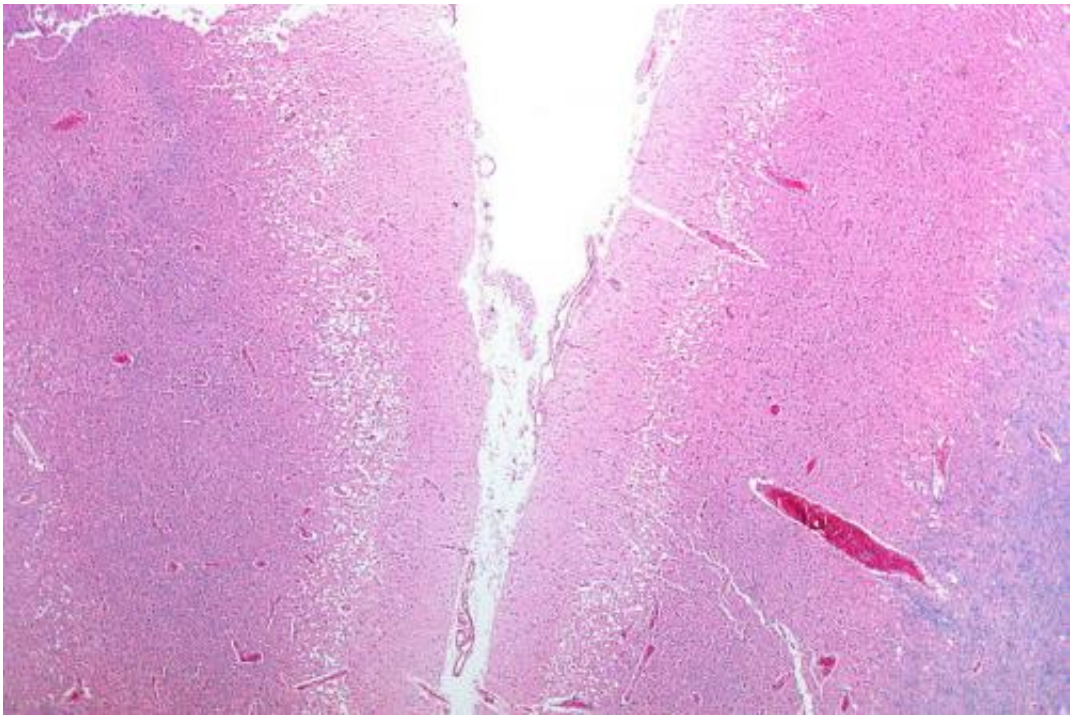

Micrograph showing cortical pseudolaminar necrosis, a finding seen in strokes on medical imaging and at autopsy. H&E-LFB stain. Credit: Nephron/Wikipedia

Scientists have discovered a gene that protects people against one of the major causes of stroke in young and middle-aged adults and could hold the key to new treatments.

Researchers from Royal Holloway, University of London, together with

an international team from across the United States and Europe, have found that people with a specific variant of a gene, known as PHACTR1, are at reduced risk of suffering cervical artery dissection, which is caused by a tear in an artery that leads to the brain.

The new discovery, published in the journal *Nature Genetics*, could lead to new treatments and prevention strategies for the disease, which is a major cause of stroke in young adults. The same gene variant has also been identified as a protector against migraines and affects the risk of heart attack.

Professor Pankaj Sharma, from the School of Biological Sciences at Royal Holloway, said: "This is an important breakthrough. Our findings provide us with a greater understanding of how this region of the genome appears to influence key vascular functions, which could have major implications for the treatment of these severe and disabling conditions. "

In the largest study of its kind ever undertaken, researchers from around the world screened the entire genome of 1,400 patients with cervical artery dissection, along with 14,400 people without the disease. Cervical artery dissection can lead to compression of adjacent nerves and to blood clotting, potentially causing blockage of vessels and brain damage.

Professor Sharma, Professor of Clinical Neurology at Royal Holloway, added: "Further genetic analyses and worldwide collaborations of this kind provide hope of pinpointing the underlying mechanisms that cause stroke. The Bio-Repository of DNA in Stroke (BRAINS) study I am leading is creating a large stroke DNA biobank which will give an exciting opportunity to identify the genes directly linked to the condition."

More information: Common variation in PHACTR1 is associated

with susceptibility to cervical artery dissection, *Nature Genetics*, DOI: 10.1038/ng.3154