Systematic review of the relationship between Hollenhorst plaque and cerebrovascular events

Baker M Ghoneim [1], Daniel Westby [1], Mohamed Elsharkawi [1], Marwa Said [2], Stewart R Walsh [1,2]

[1] Vascular surgery department, Galway University hospitals

[2] National university of Ireland Galway NUIG

Corresponding author:

Name: Baker Ghoneim

Address : Vascular surgery department, Galway university hospital

Phone: 003530871850933

Email: bakerghoneim@kasralainy.edu.eg

Conflict of interest : none

Systematic review of the relationship between Hollenhorst plaque and cerebrovascular events

Abstract

Background: Few studies have evaluated the association between asymptomatic cholesterol emboli on fundoscopy(known as Holenhorest Plaque HP) and the subsequent risk of stroke or death. [1].

Aim: To evaluate the association between the presence of asymptomatic cholesterol retinal emboli and the risk of cerebrovascular events, with assessment of the need for carotid intervention.

Methods: Pubmed, Embase and Cochrane Library databases were searched using appropriate terms. The systematic review was conducted according to PRISMA guidelines.

Results: Initial searching revealed 43 in Medline and 46 in Embase databases respectively. 24 studies were included potentially eligible after duplicate and non-related studies were excluded based on title and abstract. Three further studies were identified from reference lists. 17 studies were included in the final analysis. Asymptomatic cholesterol emboli were present in 1343 patients. Approximately 17.8% (n=181) had history of either CVA or TIA at presentation (more than 6 months). Nine studies mentioned the incidence of cerebrovascular events during follow-up. Out of 780 patients, 93 evolved to stroke, transient ischaemic attack (TIAs), or death from a major carotid event during follow-up period (6

– 86m), an incidence of about 12%. Death due to stroke was documented in 3 studies (n=12)

Conclusion: The presence of asymptomatic retinal emboli indicates a risk of a cerebrovascular event occurring when compared to patients with no plaques seen on fundoscopy. The evidence suggests that these patients warrant referral for medical optimization of cardiovascular risk factors.Currently there is no recommendation to support carotid endarterectomy in patients with Hollenhorst plaques, or retinal emboli and further studies are needed to assess this.

Keywords: Hollenhorst plaque, cholesterol emboli, retinal emboli, stroke, transient ischemic attack.