

Lambl's Excrescences: A Rare Cause of Stroke

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Cardiogenic cerebral embolism is believed to be responsible over 25% of all ischemic strokes. Since 1856, Lambl's description of small excrescences on the aortic valves has attracted widespread attention and controversy. With the increasing use of transesophageal echocardiography, ever-increasing valvular strands are being detected.

Cardioembolic stroke accounts for over 25% of all ischemic strokes (1). Atrial fibrillation, acute myocardial infarction, valvular heart diseases, infective endocarditis, non-bacterial thrombotic endocarditis and atrial myxoma represent the major cardiac causes of cerebral embolism. In routine clinical practice, Lambl's excrescences as a cause of cardioembolic stroke are not considered by the majority of physicians. The present case report illustrates the significance of considering this finding on transesophageal echocardiography (TEE) as a critical step in the work-up of an ischemic stroke patient.

Case report

A 59-year-old Caucasian male presented to the emergency room with acute worsening of shortness of breath and recurrent falls over the past few days. His past medical history was significant for coronary artery disease, diabetes mellitus, and chronic obstructive pulmonary disease. There was a longstanding history of heavy smoking, but the patient denied any intravenous drug abuse. The patient's blood pressure

The case is presented of a cardioembolic stroke secondary to Lambl's excrescences in a 59-year-old man. In addition, the current concepts regarding the importance of recognizing these valvular strands are discussed, and a brief review of the topic is provided.

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was 150/78 mmHg, with sinus rhythm. A neurological examination revealed stocking sensory loss to fine touch, pain, vibration and position sense, bilateral positive Babinski reflexes, dysmetria, dysdiadokinesia, and ataxia. The remainder of the physical examination was normal. A computed tomography scan of the head was carried out which excluded any intracranial hemorrhage. The laboratory investigations showed only poorly controlled diabetes. The patient was admitted and treated for an acute exacerbation of chronic obstructive pulmonary disease. Although his shortness of breath improved during the course of the hospital stay, the patient continued to have worsening neurological deficits. Magnetic resonance imaging of the brain demonstrated acute infarctions of both cerebral hemispheres, consistent with embolic phenomena. A further TEE evaluation revealed the presence of Lambl's excrescences (Fig. 1) on the ventricular surface of the aortic valve, without any evidence of aortic atherosclerotic plaque or vegetations. A carotid duplex ultrasonography was normal, and the hypercoagulable work-up was also negative. A diagnosis of cardioembolism, probably as a result of the Lambl's excrescences, was made and the patient started on full-dose anticoagulation. There were no further developments of any focal neurological deficits, and the patient was discharged receiving warfarin anticoagulation.

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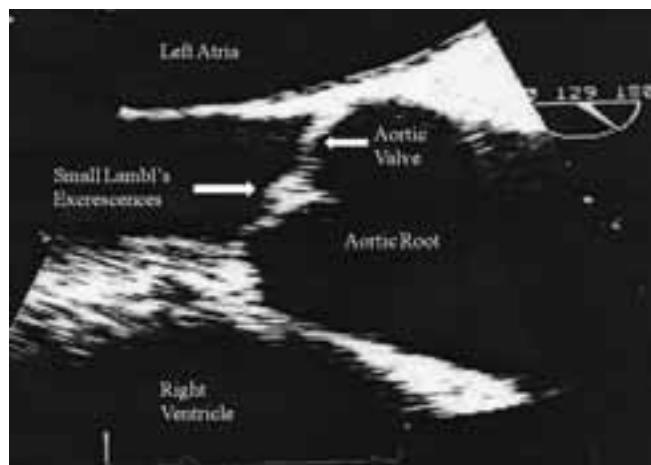


Figure 1: Transesophageal echocardiogram showing the small filiform process (Lambl's excrescences) on the aortic valve ventricular surface.

Discussion

In 1856, Lambl first described small filiform processes on the ventricular surface of the aortic valve leaflets. These so-called Lambl's excrescences are fine, fibrinous, thread-like strands that arise on the line of closure of heart valves, and are believed to result from valve wear and tear. Most Lambl's excrescences are asymptomatic, and occur most commonly on the mitral (atrial surface) and aortic (ventricular) valves. They have been rarely described on native pulmonary, tricuspid valves and prosthetic valves. A conglomeration of multiple Lambl's excrescences may detach from the cardiac valve and lead to peripheral embolization.

Lambl's excrescences are similar to papillary fibroelastomas in terms of their pathogenesis, but they differ in size, which can be identified echocardiographically, notably with TEE. On TEE, the excrescences appear as independent, hypermobile, thin, strand-like structures on the line of closure of the valves (2,3). In contrast, papillary fibroelastomas appear as pedunculated lesions on the mechanically less-affected parts of valves, and on other areas of the endocardium. Histologically, Lambl's excrescences are smaller than papillary fibroelastomas, and do not show the prominent branching and abundant subendothelial myxoid ground substance characteristic of the fibroelastomas. At present, there is no evidence to support the surgical removal of an asymptomatic papillary fibroelastoma or Lambl's excrescences. Rather, most physicians advocate therapeutic anticoagulation or the surgical removal of any symptomatic large papillary fibroelastomas that might cause recurrent peripheral embolism.

Homma and colleagues (4) concluded that there was no evidence to support the use of aspirin or warfarin to prevent adverse events in asymptomatic patients with valvular strands. Patients with a single episode of stroke should be treated with anticoagulation, as in the present case, with any further episodes requiring detailed evaluation along with possible surgical management (5).

In conclusion, further research is required on Lambl's excrescences to understand the causative role, pathophysiology, and appropriate guidelines for the management of this condition.

References

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