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Case Report

Lambl's Excrescences: A Case Report and Literature Review

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Abstract

Lambl's excrescences (LE) are filiform structures that arise on the lines of heart valve closures resulting from endothelial injury and fibrin repair. Mostly asymptomatic, LE are rarely associated with thromboembolic events, especially ischemic stroke. LE is often an underdiagnosed pathology resulting in a significant delay in diagnosis. Lack of consensus on therapeutic management can lead to a potentially life-threatening condition. We present here a case of a 24-year-old male with a history of cocaine abuse and recurrent episodes of stroke due to LE embolization. We describe the case and our treatment followed by a review of the literature.

Keywords: *Lambl's Excrescences (LE); Stroke*

Introduction

Lambl's excrescences (LE), first described by Bohemian physician Vilém Dušan Lambl in 1856, are filiform structures that arise on the lines of heart valve closures. They are fine, mobile, thread-like strands (up to 1.5 mm in width), elongated (varying from 5 to 10 mm up to 2.5 cm known as giant LE) filamentous processes that result from minor endothelial injury due to valve wear and tear. The continual striking of the valve causes intimal injury allowing fibrin to repair the damaged area [1-3]. These fibrin structures, covered by a layer of endothelial cells, uplifted from the valve surface making the excrescence [4]. LE are asymptomatic and occur most commonly on the atrial side of the mitral valve and the ventricular side of the aortic valve. They have been rarely described on native pulmonary, tricuspid valves and prosthetic valves [5].

Although rare, Lambl's excrescences can detach from the cardiac valve and lead to embolization. There have been several case reports of thromboembolic events associated with LE, including transient ischemic attack, ischemic stroke, myocardial infarction and embolization to peripheral arteries [1,3-6].

Case Report

A 24-year-old male was admitted to the emergency department after head trauma. His medical history was a recent ischemic stroke and drug abuse.

On physical examination he had residual right side hemiplegia and aortic regurgitation murmur. Brain CT demonstrated acute right frontal subarachnoid hemorrhage (SAH) and basal ganglia, internal capsule and right radiate crown hypodensity compatible with chronic stroke disease (Figure 1).

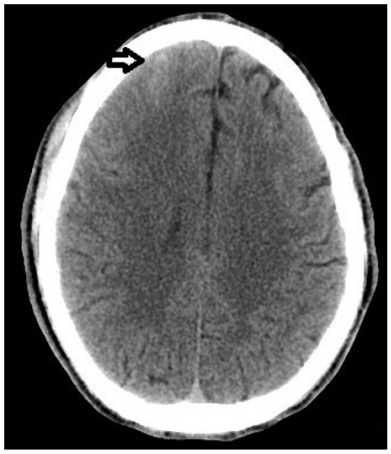

Figure 1: *CT brain showing an acute right frontal subarachnoid hemorrhage (SAH).*

In our department Internal Medicine, as a part of the workup, common causes of stroke were ruled out (negative ECG, holter ECG, hypercoagulability panel, carotid US). Transthoracic echocardiogram showed aortic regurgitation and a linear mobile echo density on the aortic leaflets (Figure 2) confirmed by transesophageal echocardiography (TEE) (Figure 3). Cardiac MRI was performed and demonstrated the presence of LE (Figure 4).

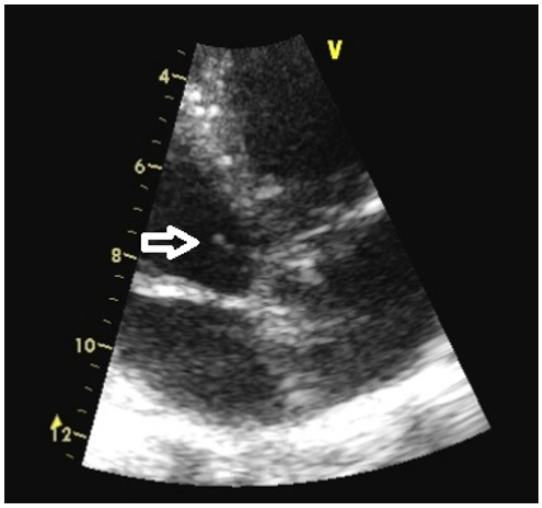

Figure 2: *Transthoracic echocardiogram showing the small Lambl's excrescence.*

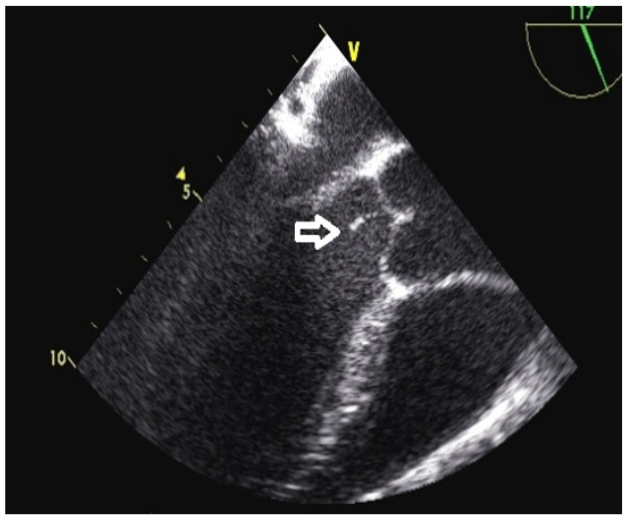

Figure 3: *Transesophageal echocardiogram (TEE) showing a small excrescences on the aortic valve protruding into the as¬cending aorta*

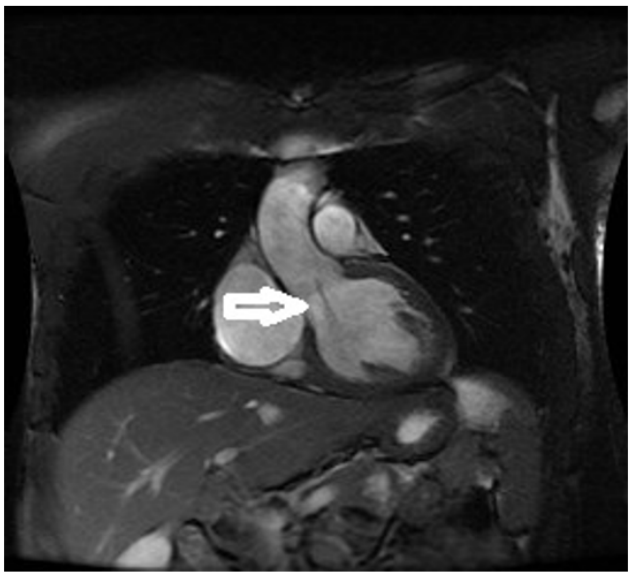

Figure 4: *Cardiac MRI showing the presence of LE.*

The patient started antiplatelet treatment while waiting for cardiac surgical procedure. DWI and FLAIR MRI sequences revealed left parietal, temporal and insular cortex infarction, suggesting a subacute ischemic stroke (Figure 5). He underwent surgical excision with aortic valve replacement and was discharged with warfarin therapy.

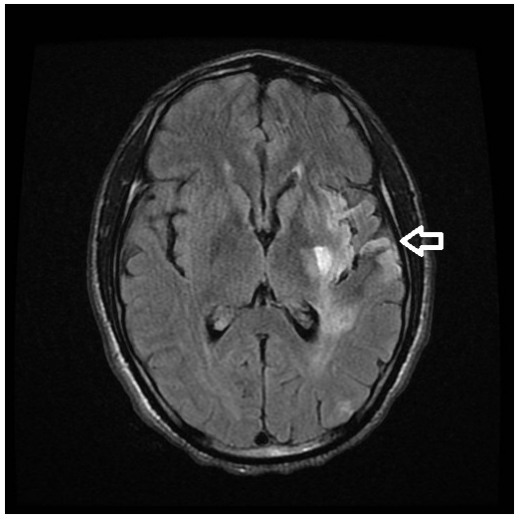

Figure 5: *MRI brain , DWI and FLAIR sequences showing left parietal, temporal and insular cortex infarction.*

Discussion

Cardioembolism accounts for nearly 20% of ischemic stroke. Lambl's excrescences are reported in 22% of patients who undergo TEE. Despite this high prevalence, the incidence of cardioembolic stroke secondary to LE is unknown, possibly due to underdiagnosis of this condition [2].

The exact mechanism of LE embolism is yet to be understood. Embolization can occur as a result of a thrombus that originated from LE vegetations or as a LE's fragment detachment. Ischemic events have been commonly observed in association with aortic valves LE but there is no clear evidence showing a correlation between the involved valve, strand size and the potential risk of thromboembolic event [3,7-9].

LE should be considered in the differential diagnosis of cryptogenic stroke performing TEE as a critical step in the workup of any ischemic stroke [9]. In our patient, cocaine abuse alone could not explain the first episode of stroke, although it was diagnosed as cryptogenic and no TEE workup was done at that time. During his last hospitalization, alternative causes of stroke were ruled out and LE was found on TEE.

The differential diagnosis includes vegetation, thrombus, cardiac myxoma, papillary fibroelastoma and aortic dissection. It could be difficult to differentiate between LE and papillary fibroelastoma's. Papillary fibroelastoma's are small pedunculated jellylike mass, attached by a short broad-based stalk affected parts of valves and other areas of the endocardium [10]. In contrast, Lambl's excrescences appear as mobile, fine structures on the line of closure of the valves, smaller than papillary fibroelastomas and do not show the prominent branching and abundant subendothelial myxoid ground substance characteristic of the fibroelastomas [5].

There are no consensus on treatment and management is largely based on few case reports in the literature. Medical management varied greatly, ranging from aspirin alone, dual antiplatelet therapy, anticoagulation therapy with warfarin to novel oral anticoagulants. Some authors recommend to start treatment with dual antiplatelet therapy and consider a trial of anticoagulation, before surgical resection, if there is a recurrent ischemic event while on this antiplatelet therapy. Others did not find benefit of aspirin or warfarin therapy for stroke prevention and only recommend a close monitoring of asymptomatic patients. The indications for surgical excision of LE are

still controversial [2,5,8,10,11]. In our case, the patient did not benefit from antiplatelet therapy. During hospitalization he had a second episode of stroke and underwent surgical treatment.

Conclusion

Further research is needed to evaluate the clinical importance of LE, its pathophysiology and the association with ischemic events and how to manage and treat this condition. LE should be considered in all patients who present cardioembolic signs and they should undergo a transesophageal echocardiography for evaluation. The optimal treatment for patients with LE is yet to be determined. Decision between observation, conservative therapy or surgical intervention should be decided case-by-case and be based on the pre-operative risk stratification of the patient.

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