

Pitfall in Echocardiography: infective endocarditis or valvular strand? Case report

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Abstracts

Lambl’s excrescences are thin filiform mobile processes with thin attachment at valvular closure lines. In this case report we describe the transesophageal views of Lambl’s excrescences; our case is meant to serve as a classic example of this commonly misinterpreted lesion.

Keywords: valvular strand, Lambl’s excrescences, transesophageal echocardiography

Introduction

Lambl’s excrescences are thin filiform mobile processes, referred often as valvular strands [1]. The pathogenesis is believed to be related to endocardial lesions in areas of high stress (valvular closure lines) [2].

In this case we describe transesophageal views of Lambl’s excrescences; our case is meant to serve as a classic example of this commonly misinterpreted lesion.

Case report

A 64-year-old female was referred at our Echo-Lab for transesophageal echocardiogram after a cardiologist’s transthoracic study suggested vegetation on the aortic valve. The physician’s clinic note reported recent history of fever and pharyngitis, 6 months before the referral. The patient experienced two months earlier a viral myocarditis exhorted with worsening dyspnoea and left

bundle branch block and resulting in a dilated cardiomyopathy. In the previous echocardiogram there was no mention of mass on the aortic valve.

Transesophageal echocardiogram showed linear mobile densities on the aortic leaflets. Linear strands could be seen emanating from the ventricular aspect of the aortic valve leaflet tips (fig 1, fig 2), appearing as thin, strand-like structures on the leaflet’s line of closure moving with an independent, hypermobile quality (fig 3).

This echocardiographic appearance was consistent with Lambl’s excrescences or valvular strands; however considering the clinical history of the patient, she was

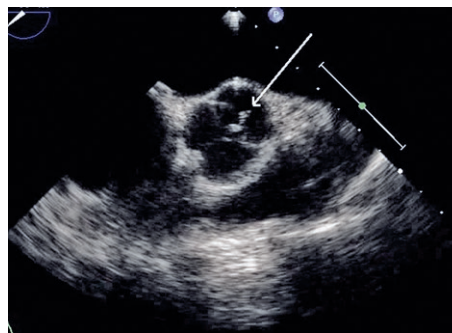


Fig 1. Transesophageal Echocardiography: short axis view of the aortic valve. Arrow: linear strands

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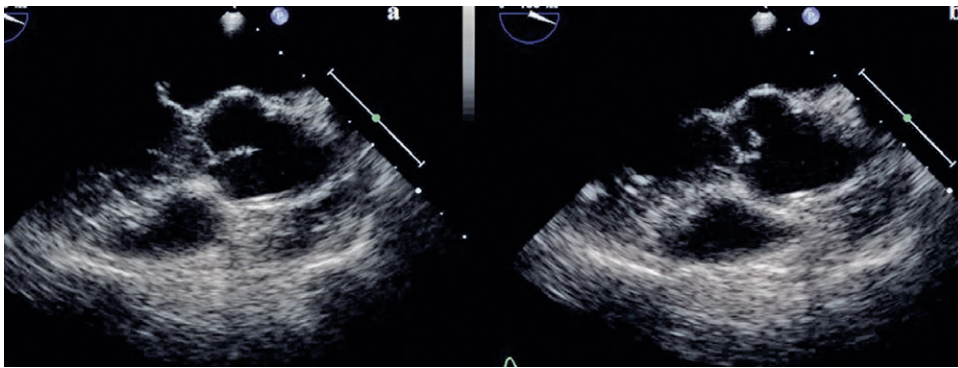


Fig 2. Transesophageal Echocardiography, long axis view of the aortic valve. The excrescence appear as a large strand at valve closure respectively proto (a) and meso (b) diastolic frame.

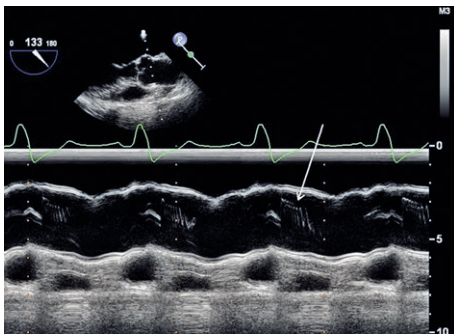


Fig 3. Transesophageal Echocardiography, M mode on the aortic valve showing the independent, hypermobile quality of the excrescence (white arrow).

referred to an Infectious Disease consultant, with a negative workup.

The patient was diagnosed having Lambl's excrescences of the aortic valve. She was asymptomatic for previous cerebrovascular event, so she was enrolled for a long term follow-up and managed medically recommending to continue her lifetime antiplatelet therapy.

Discussions

Lambl's excrescences are filiform fronds with a thin attachment that occur typically at valvular closure lines, sites of minor endothelial damage, due to high stress and trauma; they are made by a connective core covered by a single layer of endothelial cells. The differential diagnosis includes fibroelastoma, myxoma, thrombi, vegetations, nonbacterial thrombotic endocarditis, and cardiac tumors and metastases. Most difficult and controversial is the distinction between Lambl's excrescences and vegetations or fibroelastomas; the latter are usually attached to the downstream side of the valve by a pedicle and are typically larger, break out into fronds-like projections and are covered by multiple layers of endothelial cells,

their mobility being the most important predictor of possible embolization [3].

Endocarditic vegetations typically appears as irregular masses with a different echogenicity from that of the underlying cardiac structure, adherent to a valve leaflet and with mobility independent to the associated valve, and can be associated to other pathognomonic echocardiographic findings like abscess and new dehiscence of a prosthetic valve; in particular they should be associated with clinical signs of infective endocarditis and valvular dysfunction.

In a retrospective analysis, valvular strands on native and prosthetic valves were found in 5.5% of patients referred to TEE [4] and in 0.94% of patients aged 61-70 referred to both TTE and TEE [5]; as most of the patients who undergo TEE have a suspect of endocarditis or of a potential cardiac source of embolism, there could be a bias of selection, which makes differential diagnosis more challenging. That is the case of our patient, which is paradigmatic, as she was referred to TEE for suspect vegetation on the aortic valve; in this case a good clue of its real nature was the echocardiographic features of the finding, which was thin, highly mobile, regularly shaped and attached on the ventricular side of an otherwise normal aortic valve.

The history of myocarditis and streptococcal angina was misleading, while the absence of a new murmur and other clinical symptoms or signs of endocarditis were more suggestive of a benign finding. Still, the fact that this strand was never identified before should not be surprising, as TTE is less sensible than TEE in detection of these thin masses, but a new accidentally discovered strand can be really confounding, as it may raise the doubt of a new endocarditic lesion in presence of risk factors.

Nevertheless the role of strands in pathological conditions in themselves, although debatable, is also a reason to ensure their proper identification and characterization. In previous reports strands account for a higher risk of stroke or embolism [4], but there is consensus in a conservative strategy of follow up for silent, asymptomat-

ic lesions accidentally discovered. In our case, despite the patient was asymptomatic for prior cerebrovascular events, antiplatelet therapy was chosen, given the fact that she was considered at higher risk for her previous history of myocarditis and heart failure.

In conclusion, strands are frequent findings, with an unclear role in stroke and/or embolism, expected in future to become still more common with the diffusion of high resolution echocardiographic systems; their clear and proper identification is mandatory, as they can be easily misinterpreted as different pathological entities, and the diagnostic pathway should always be integrated with an accurate clinical investigation.

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