CASE REPORT

Incidental finding of a papillary fibroelastoma on the aortic valve in 16 slice multi-detector row computed tomography

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Papillary fibroelastoma (PFE) is a benign, rare, gelatinous tumour derived from the endocardium, primarily the cardiac valves, which is usually diagnosed by high resolution echocardiography. Although rarely clinically symptomatic, PFEs have a potential for coronary ischaemia, systemic embolisation with neurologic symptoms, and sometimes valvar dysfunction. There are reports of coronary occlusion and even sudden cardiac death due to a ball valve phenomenon on the coronary ostia. This report describes the characteristics of a PFE with multidetector 16 slice computed tomography and 1.5 Tesla cardiac magnetic resonance imaging.

We present the case of a 69 year old patient that underwent multi-slice spiral computed tomography (CT) for non-invasive coronary angiography to rule out obstructive coronary heart disease (CHD) using a 16 slice CT scanner (Philips MX 8000 IDT).

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The patient complained of intermittent dizziness and dyspnoea. The coronary risk factors were obesity and hyperlipidaemia.

Multi-slice spiral CT revealed a 1.0×1.9 cm mobile, peduncular mass attached to the sinus surface of the left coronary cusp of the aortic valve in close proximity to the ostium of the left coronary artery and right coronary artery

Panel B

(panels A and B). A stalk attachment was clearly identified and the size was 1.1–1.9 cm.

Assessment of the coronary arteries revealed obstructive three vessel disease (panel C).

Transoesophageal examination showed a competent aortic valve with the presence of a $1.1 \times 0.9 \times 1.9$ cm highly mobile, spherical pedunculated tumour with visualisation

Panel A

Panel C

Abbreviations: CT, computed tomography; CHD, coronary heart disease; PFE, papillary fibroelastoma

Panel D

Panel E

of a stalk (panel D). Cine magnetic resonance imaging (with 1.5 Tesla Philips Gyroscan) showed late hyperenhancement of the aortic valve tumour on T1 weighted imaging

Panel F

Panel G

Panel H

15 minutes after administration of 30 ml gadolinium diethylenetriamine pentaacetic acid (Gd-DTPA) (panel E) caused by the fibroelastic tissue of the mass.

We recommended bypass surgery and removal of the valve tumour. Preoperative Doppler ultrasound and magnetic resonance angiography revealed a significant left sided carotid stenosis.

The tumour was removed surgically with preservation of the aortic valve (panels F, G, and H) and the patient received bypass surgery with left internal mammary artery (LIMA) to the ramus interventricularis anterior (RIVA), and saphenous vein grafts to the left circumflex artery and to the right coronary artery as well as thrombendarterectomy (TEA) of the left internal carotid artery (Department of Cardiovascular Surgery, Heart Center Siegburg, PDS. Iversen, MD).

Histological examination (panel I) showed in the elastic van Gieson stain multiple branching papillary fronds consisting of dense fibroelastic tissue surrounded by a layer

Panel I

of loose connective tissue with mucopolysaccharides and endothelial cells. The patient recovered without any cardiac complications.

DISCUSSION

Papillary fibroelastoma (PFE) is a benign, rare, gelatinous tumour derived from the endocardium; it primarily affects the cardiac valves and is usually diagnosed by high resolution echocardiography.

Rarely, clinically symptomatic PFEs have a potential for coronary ischaemia, systemic embolisation with neurological symptoms, and sometimes valvar dysfunction. There are reports of coronary occlusion and even sudden cardiac death caused by a ball valve phenomenon on the coronary ostia, especially when the PFE was located on the sinus surface of the right or left coronary cusp of the aortic valve. This is the first report describing the characteristics of a PFE with multi-detector 16 slice CT and 1.5 Tesla cardiac magnetic resonance imaging.

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