Giant aneurysm in the sinus of Valsalva presenting as an acute coronary symptom

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Abstract

We describe an 85-year old male who was admitted to the hospital with acute coronary symptoms. Bedside echocardiography revealed a structure in the aortic root, and a computed tomography scan verified the diagnosis of an aneurysm in the sinus of Valsalva below the left coronary ostium. A coronary angiography also depicted the aneurysm clearly and clearly showed how the aneurysm compressed and dislocated the left main coronary artery, explaining his initial symptoms. The patient was operated on with an aortic root replacement procedure, and recovered quickly.

Keywords: Sinus of Valsalva • Aneurysm • Acute coronary symptom

INTRODUCTION

The patient was an 85-year old man with atrial fibrillation and hyperplasia of the prostate. He was on Coumadin and beta-blockers after a transient ischaemic attack. He lived alone without assistance. Two months earlier, he experienced chest pain while walking and contacted a private practitioner, who referred him to the local hospital. The symptoms aggravated to several episodes of chest pain a day, leading him finally to come to the emergency department, where he was admitted. His electrocardiogram revealed a left bundle branch block, and troponin T was slightly elevated to 23 ng/l. He initially met the criteria for acute coronary syndrome. However, bedside echocardiography revealed suspicious pathology in the aortic root. A computed tomography (CT) scan was performed showing an isolated aneurysm of the left sinus of Valsalva, measuring 45 × 46 mm with normal diameter in the remaining aortic root and the ascending aorta (Figs. 1A and B). A coronary angiogram depicted the aneurysm and non-significant lesions in the coronary arteries (Fig. 1C).

SURGERY

Intraoperative transesophageal echocardiography depicted the aneurysm well (Fig. 2A) and showed a slightly reduced ejection fraction with hypokinesia corresponding to the left anterior descending and circumflex artery. Surgery was performed using cardiopulmonary bypass at 32°C. When the aorta was opened, the aneurysm was clearly visible directly under the left coronary artery ostium, and the aortic leaflets were in good condition (Fig. 2B). However, the aortic wall in the non-coronary sinus and the right coronary sinus was pathologically thin. It was decided to perform aortic root replacement with an exclusion technique using a 28-mm CARDIORoot vascular prosthesis (Maquet AB, Solna, Sweden) and 27-mm St Jude Epic Biological Aortic Valve (St Jude Medical, Inc., St Paul, MN, USA) as a composite graft.

POSTOPERATIVE COURSE

The patient was extubated the following day with no signs of periprocedural myocardial or cerebral ischaemia. The IABP was removed on the second postoperative day, and the patient was moved to the ward the following day. He was quickly mobilized on the ward, with neither infections nor renal complications. Histology of the sinus revealed atheromas and signs of chronic inflammation (Fig. 2C).

He was moved to the referring hospital on the 7th postoperative day and was discharged after another 6 days. At follow-up 1 month later, he had recovered well, was living at home with some assistance, could take daily walks and his haemoglobin level had normalized to 128 g/l.

DISCUSSION

Different forms of sinuses of Valsalva have been described [1-3], and surgery has been performed in a few cases [3, 4]. The most

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The common location is the right coronary sinus, and the most common symptoms are dyspnoea and fatigue [1]. To our knowledge, a successful repair in such an old patient, presenting with...
signs of acute coronary syndrome on admittance to the emergency room on the basis of a sinus of Valsalva aneurysm in the left coronary sinus, has not been described. The chest pain experienced could be due to either an impeding rupture or compression of the left main stem (Fig. 1C). Moreover, most reports describe patients of a less advanced age. We chose to operate on this elderly patient because he was in good physical condition and managed his daily life without assistance. Given his advanced age, reduced ejection fraction, and that all of the aortic sinuses were pathologically thin, we chose a Bentall procedure over a David procedure with shorter cross-clamp time. At his age, the potential benefits of valve and root plasty were considered minimal. The indication for surgery could be questioned on account of his advanced age and the fact that earlier reports have stated a mean survival of 4 years for untreated aneurysms [1]. However, a retrospective examination of a 3-year old CT scan performed as a cancer screening found the aneurysm measuring 28 × 31 mm. Thus, an increase in the diameter of the aneurysm together with symptoms of coronary artery ischaemia justified surgical intervention.

Conflict of interest: none declared.

REFERENCES


eComment. Sinus of Valsalva aneurysm presenting with angina

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We read with great interest the case report by Bjursten and associates. This is truly a unique case of an elderly patient presenting with acute coronary symptoms due to a 4.5-cm sinus of Valsalva aneurysm compressing the left main coronary artery [1]. Such aneurysms are not rare, especially in patients with connective tissue disorders, such as Marfan or Loyes-Dietz syndrome. However, most of these patients present with aortic root dilatation rather than an isolated sinus aneurysm [2]. Recently, we operated on a 72-year old female patient with Marfan syndrome, who presented with angina. Work-up revealed a 4.6-cm sinus aneurysm compressing the right coronary artery. We elected to perform valve-sparing aortic root replacement without complications and with symptom resolution.

Aneurysms of the sinuses of Valsalva should be managed aggressively if they are expanding in order to avoid the complications involving rupture or coronary artery obstruction that can be catastrophic. Thus, the appropriate treatment is the replacement of the aortic root with a Dacron graft, either in the form of a Bentall or a valve-sparing operation [3].

Conflict of interest: none declared.

References

