The management of patients with CAA is controversial. There are few data regarding medical therapy for coronary aneurysms. Medical management generally includes antiplatelet and/or antithrombotic agents, the use of which has been anecdotal.

Concerns relating to stent graft treatment of coronary aneurysms include closure of contiguous side branches arising next to the aneurysm site, stent thrombosis and recurrent restenosis. Placing coronary coils behind stents to thrombose the aneurysm sac can also be challenging and requires considerable expertise. Poly-tetrafluoroethylene (PTFE) covered stents which are easy and rapid to deploy have emerged as a new tool for the treatment of CAA [19, 20]. However, some multicentre randomized trials in comparing expanded PTFE stent graft with bare metal stents have shown that these stents do not improve clinical outcomes and may be associated with a higher incidence of restenosis and early thrombosis [21]. There have been very few case reports of treatment of CAA with covered stent graft and the technique is still in the evolving phase [22].

Surgical approach is thought to be safer and more reliable for repair of a coronary aneurysm/pseudoaneurysm. The indications for the surgical treatment of CAA in general are (i) severe coronary stenosis, (ii) complications such as fistula formation, (iii) compression of the cardiac chambers, (iv) high likelihood of rupture such as rapidly increasing size of the aneurysm or pseudoaneurysm and (v) any type of aneurysm developing after coronary intervention [23, 24].

Operative therapy may include aneurysm ligation, resection or marsupialization with interposition graft, and the ideal approach has not yet been formally studied [25].

In our 3 cases of coronary aneurysm, a common surgical technique was employed which included proximal ligation, plication and revascularization. In 1 case, proximal ligation and revascularization was done.

In conclusion, the treatment for coronary artery aneurysm is still controversial. We propose that post-stenting aneurysms (with or without coronary stenosis), expanding aneurysms/pseudoaneurysms, infected aneurysms and symptomatic aneurysms should be surgically treated. The optimum surgical therapy for coronary aneurysms includes proximal ligation, plication and revascularization. Results after surgical therapy are excellent.

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REFERENCES


eComment: Coronary artery dilatation: ectasia or aneurysm

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We read with great interest the paper by Singh et al [1]. They described surgical treatment including proximal ligation and plication of the aneurysm with coronary artery bypass grafting in a series of 4 cases of coronary artery aneurysm (CAA) from a single centre. We would like to congratulate the authors for bringing such a rare entity to our attention. We would also like to add a short comment on this topic.
Coronary artery dilatation is an exceptional and frequently unrecognized incidental finding in patients with coronary artery disease [2]. At present there is no uniform definition of this pathology. Coronary artery ectasia (CAE) and CAA are characterized by an abnormal dilatation of the coronary artery. They are used interchangeably for the condition. CAE may be classified into four types on basis of the extent of coronary artery involvement:

Type I - diffuse ectasia of two or three vessels;
Type II - diffuse ectasia in one vessel and localised disease (i.e., aneurysm) in another;
Type III - diffuse ectasia in one vessel only, and;
Type IV - localised or segmental involvement (CAA) only [3].

This classification may have prognostic implications, with the worst outcomes in types I and II [2].

CAE may be classified in three different ways on the basis of the composition of the vessel wall (true aneurysms or pseudoaneurysms), the morphologic structure (saccular or fusiform aneurysms), and size (e.g., large or giant aneurysms) [2]. The various factors contributing to CAA formation include atherosclerosis, congenital malformations, Kawasaki disease, percutaneous coronary interventions, inflammatory arterial diseases (polyarteritis nodosa, systemic lupus erythematosus, Takayasu’s arteritis), infectious causes (endocarditis, syphilis, candidosis, Lyme borreliosis), chest traumas, vasculitis (e.g., Behcet disease), connective tissue disorders (Marfan’s syndrome, Ehlers Danlos syndrome, scleroderma), primary cardiac lymphoma and primary hyperaldosteronism [2].

CAE is used to describe diffuse dilatation (>1.5 times the normal diameter) of the coronary arteries that involves 50% or more of the length of the vessel. However, CAA is defined as a localized dilatation that exceeds the diameter of normal adjacent coronary artery segments, or the diameter of the patient’s largest coronary vessel by 1.5 times. Herein, coronary artery involvment is less than 50% of the total length of the vessel [2]. A giant aneurysm is defined as one where the maximal vessel diameter exceeds 20 mm in adults or 8 mm in children. In adults, the reported diameter of giant CAAs varies from 50 to 150 mm. Giant CAs are rare, with a reported prevalence of 0.02% [4]. Potential complications include rupture (subsequent cardiac tamponade), thrombosis, embolization, dissection, mechanical obstruction, and erosion into surrounding structures. In these patients, surgery should be considered as a means to avoid complications [5].

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References