March 2018

Treatment of a Rare Vascular Complication of Coronary Stenting in an Octagenarian

Hunaina Shahab  
*Aga Khan University*, hunaina.shahab@aku.edu

Bilal Hussain  
*Aga Khan University*, bilal.hussain@aku.edu

Nasir Rahman  
*Aga Khan University*, nasir.rahman@aku.edu

Fateh Ali Tipoo Sultan  
*Aga Khan University*, fatehali.tipoo@aku.edu

Follow this and additional works at: [https://ecommons.aku.edu/pakistan_fhs_mc_med_cardiol](https://ecommons.aku.edu/pakistan_fhs_mc_med_cardiol)  
Part of the [Cardiology Commons](https://ecommons.aku.edu/pakistan_fhs_mc_med_cardiol)

Recommended Citation  
Available at: [https://ecommons.aku.edu/pakistan_fhs_mc_med_cardiol/47](https://ecommons.aku.edu/pakistan_fhs_mc_med_cardiol/47)
INTRODUCTION
Coronary artery aneurysms (CAN) are defined as more than 50% dilatation of coronary arteries compared to reference vessels diameter, with incidence of 0.35 to 6.0%.1,2,3 Previously, CAN had been reported with bare metal stents (BMS) secondary to stretch, stent fracture and dissection.2 Recently, increasing number of cases report CAN after drug-eluting stent (DES) implantation.4,5 To the best of the authors’ knowledge, they present the first case from Pakistan of a left anterior descending coronary artery aneurysm after DES implantation treated successfully with stenting under intravascular ultrasound guidance.

CASE REPORT
An 85-year lady with a history of percutaneous intervention (PCI) to left anterior descending LAD with CypherTM stent (DES) in 2007, presented to the Emergency Department of The Aga Khan University Hospital with increasing restlessness and cough. She had a pulse of 110 beats/minute, respiratory rate of 40 breaths/minute and blood pressure of 90/60 mmHg. She had bibasilar crepitations on auscultation and troponin-I of 10.5 ng/ml. Her electrocardiogram (ECG) showed old left bundle branch block. Transthoracic echocardiogram showed an estimated ejection fraction of 25-30% with akinetic apex, septum, mid anterior segments along with mild-moderate aortic stenosis and moderate mitral regurgitation.

She underwent a left heart catheterisation via right femoral artery 6F sheath (Cordis®). Left coronary system was visualised using JL4 6F catheter showing short left main vessel bifurcating into LAD and left circumflex vessels (LCx). LAD had tight in-stent re-stenosis (ISR) in the proximal part of previous stent (Cypher 2.5x23 mm), followed by CAN (Figures 1A and 1B). LCx had mild plaquing. Right coronary artery was engaged using JR4 6F diagnostic catheter, showing mild plaquing.

The left main artery was engaged with VL3 (Cordis®) guiding catheter and LAD wired with BMW (Abbott®)
Coronary angiography is gold standard for diagnosing CAN. They suggest percutaneous treatment with stent implantation for stent-related CAN. The only available data are isolated case reports. There are no documented guidelines for management of pseudoaneurysms. The size of aneurysms especially in cases of DES thrombosis is suggested. We used IVUS, as it aptly detects mal-apposition of DES and vessel wall and also defines the size of aneurysms.

There is a lack of guidelines on the choice of antiplatelet therapy and duration of antiplatelets in cases of CAN. We decided to keep our patient post-PCI on DAPT and GpIIb/IIIa infusion for optimal antiplatelet effect.

The patient was kept on dual antiplatelets (DAPT) and glycoprotein IIb/IIIa inhibitor (GpIIb/IIIa) infusion. She improved over the course of admission.

**DISCUSSION**

DES are impregnated with drugs which interfere with inflammatory pathways and neo-intimal proliferation, however, these local effects induce delayed re-endothelialisation, hypersensitivity reactions, and inflammatory changes of vessel wall, leading to CAN formation. Coronary angiography is gold standard for diagnosing CAN, yet it only gives information regarding lumen of the arteries. IVUS allows detailed characterisation of the aneurysms, as it visualises layers of the coronary arteries and differentiates between true and pseudo-aneurysms.

Aoki et al. have classified CAN into 3 types. Type-1 occurs within 1 month secondary to mechanical injury to the arterial wall. Type-2 occurs after 6 months of stent placement as an arterial wall response to DES. Type-3 are infectious mycotic aneurysms.

There are no documented guidelines for management of stent-related CAN. The only available data are isolated management protocols from individual case reports. These include observation, antiplatelet treatment, coiling or surgical excision. Aoki et al. proposed a management plan. They suggest percutaneous treatment with stent graft, bavemetelel stent (BMS) or surgery for large (more than 2 times the size of reference vessel) or symptomatic pseudo-aneurysms and large and/or symptomatic true aneurysms. For small or asymptomatic true and pseudoaneurysms, followup angiography at 3 to 6 months is suggested. For small true aneurysms and those large asymptomatic with no change in follow-up angiography, careful observation and DAPT is suggested. There is a lack of guidelines on the choice of antiplatelet therapy and duration of antiplatelets in cases of CAN. We decided to keep our patient post-PCI on DAPT and GpIIb/IIIa infusion for optimal antiplatelet effect.

**REFERENCES**