Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/ihj

Case Report

Stent thrombosis with an aneurysm 7 years after a drug eluting stent implantation

Pritam Patil [a], *Arvind Sethi* [b], *Upendra Kaul* [c,*]

[a] *Senior Resident, Fortis Escorts Heart Institute, Okhla Road, New Delhi 110025, India*
[b] *Consultant, Fortis Escorts Heart Institute, Okhla Road, New Delhi 110025, India*
[c] *Prof, Executive Director and Dean, Department Of Intervention Cardiology, Fortis Escorts Heart Institute, Okhla Road, New Delhi 110025, India*

ARTICLE INFO

Article history:
Received 25 September 2013
Accepted 5 February 2014
Available online 27 March 2014

Keywords:
Coronary artery aneurysm
Stent thrombosis
Drug eluting stent

ABSTRACT

We report a case of very late stent thrombosis 7 years post sirolimus eluting stent implantation presenting as ST elevation MI while on dual antiplatelet therapy. Angiography revealed an aneurysm at the proximal end of the stent. The patient was managed successfully by primary percutaneous coronary intervention (PCI) with adjunct thrombus aspiration and intracoronary abciximab administration followed by deploying a mesh-covered stent MGuard. This very late complication is a rare presentation after a drug illuting stent (DES).

1. Introduction

Historically coronary artery aneurysms were first described by Morgagni in 1761.[1,2] Coronary artery aneurysm, defined as dilatation of the coronary artery exceeding 50% of the reference vessel diameter, is uncommon and occurs in less than 5% of coronary angiographic series.[3]

We report a rare case of coronary aneurysm presenting as acute ST elevation MI (STEMI) secondary to very late stent thrombosis (VLST) 7 years after implantation of a first generation sirolimus eluting stent (SES) implantation.

2. Case report

A 52-year-old male normotensive, non-diabetic, non-smoker having strong family history of coronary artery disease (CAD) had effort angina in August 2006. Treadmill test (TMT) done subsequently was positive reversible myocardial ischemia (RMI). Coronary angiography done same month was suggestive of Double vessel disease: Left anterior descending artery (LAD) 90% mid segment stenosis and Left circumflex (LCX) 90% proximal and extending into a large obtuse marginal branch. Subsequently patient underwent angioplasty with stenting using a sirolimus eluting stent (Cypher) 3 × 13 mm to LAD, a Zotarolimus eluting stent (Endeavor) 3 × 24 mm to proximal LCX and a sirolimus eluting stent (Cypher) 2.5 × 28 mm to OM1 branch. Procedure was uncomplicated and the patient was discharged on dual antiplatelet therapy (aspirin and clopidogrel).

Patient was on a regular follow up after the procedure and was continued with long-term dual antiplatelet therapy due to a high-risk profile. In October 2009 patient developed chest discomfort, electrocardiogram (ECG) done subsequently was suggestive of acute inferior STEMI. Angiography done this

* *Corresponding author.*
E-mail address: kaul.upendra@gmail.com (U. Kaul).
http://dx.doi.org/10.1016/j.ihj.2014.02.002

time was suggestive of in stent thrombosis in the LCX and OM1 stents. The LAD stent was patent with no evidence of any aneurysm. plain old balloon angioplasty (POBA) was done to the culprit lesion followed by IV bolus of t-pa within 4 hours of symptoms. Patient recovered from procedure without complication. A check angiography was not done.

After this event patient continued on dual antiplatelet therapy along with statins, beta blocker and anti-ischemic therapy. TMT done in August 2010 was negative for RMI. Echocardiography showed an inferior wall hypokinesia and left ventricular ejection fraction (LVEF) 50%. In August 2013, 7 years after the first procedure patient had acute onset chest discomfort. Patient presented to hospital within 3 hours of onset of symptoms. ECG done was suggestive of acute anterior wall STEMI. He was immediately shifted to catheterization laboratory for primary angioplasty. Angiography done showed LAD in stent thrombosis with an aneurysm at proximal end of stent. There was angiographic visible thrombus in the stent and the vessel distal to it (Fig. 1). The guide wire initially went proximally between the malapposed stent and the vessel wall (Fig. 2). Although a 2 mm balloon went through the thrombosuction catheter did not go. Another wire was taken which was navigated through the correct path (Fig. 3). A thrombosuction followed by administration of intracoronary abciximab was done which made the vessel look angiographically free of thrombus (Fig. 4). Lesion was predilated with 2 × 12 mm balloon at 20 ATM and with 3 × 10 mm balloon at 10 ATM. The whole length was stented using a mesh-covered MGuard stent 3.5 × 29 mm (Inspire MD) deployed at 10 ATM. This was post dilated with 4 × 12 mm balloon at the site of the aneurysm with good angiographic result (Fig. 5). There was no slow flow encountered during the procedure. The thrombolysis in myocardial infarction (TIMI) flow was three at the end of the procedure. Patient became asymptomatic and was discharged in stable condition after 48 hours. The LVEF at discharge was 35% with a hypo kinetic anterior wall. Clopidogrel was changed to prasugrel and aspirin continued. Atorvastatin dose was increased to 80 mg, beta blockers and angiotensin converting enzyme inhibitors (ACEI) were continued in appropriate doses. 4 weeks following the procedure he is asymptomatic.

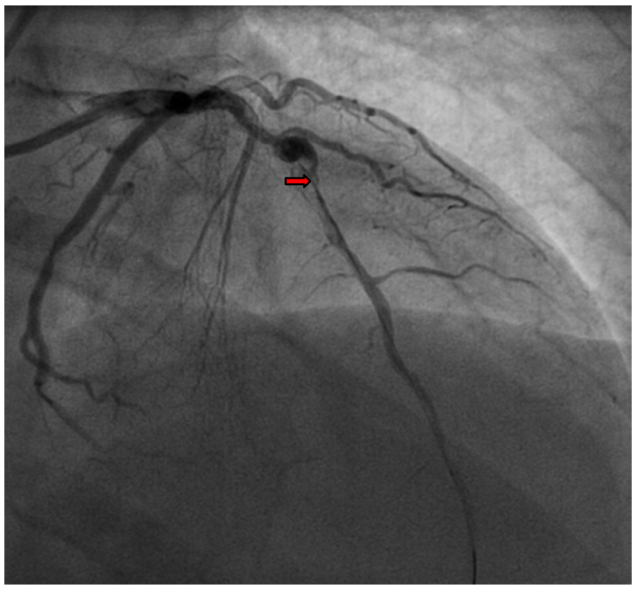

Fig. 2 – Lesion crossed with a guide wire. Thrombectomy catheter did not cross the stent.

3. Discussion

Coronary artery aneurysms are a rare complication of coronary stenting, whose true incidence, clinical course, and treatment are largely unknown. Data on coronary aneurysms are derived mainly from case reports and is uncommon, occurs in less than 5% of coronary angiographic series.[3] Coronary aneurysms have been detected from as early as 3 days

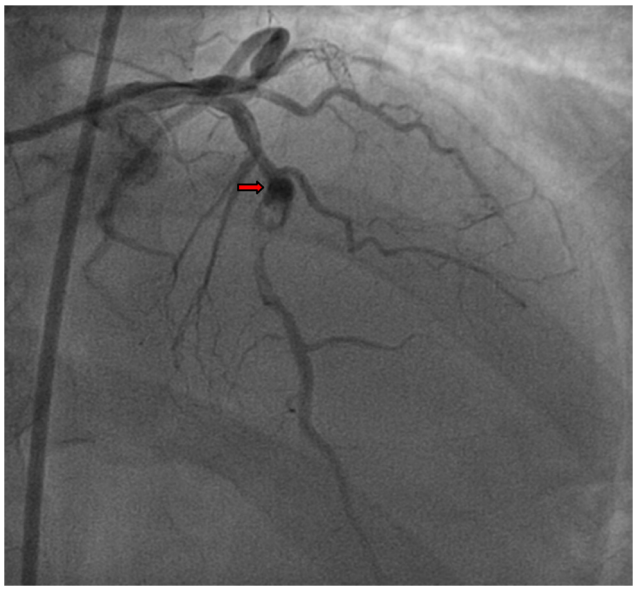

Fig. 1 – Aneurysm at the proximal end of the stent and angiographically. Visible thrombus.

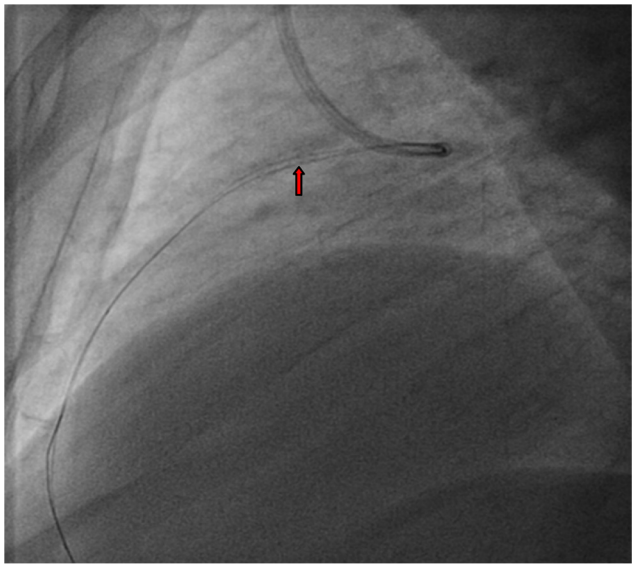

Fig. 3 – Two guide wires through the stent. The lower wire is through the wall of the aneurysm and mal opposed stent