



ORIGINAL RESEARCH PAPER

Cardiology

A CASE OF CORONARY ARTERY ANEURYSM AFTER SIROLIMUS ELUTING STENT IMPLANTATION

KEY WORDS:

Dr. Harshad Rajge	Dr. DY Patil school of medicine, Ayyapa temple road, Nerul, Navi Mumbai, Maharashtra, 400706
Dr. Vivek Patel	Dr. DY Patil school of medicine, Ayyapa temple road, Nerul, Navi Mumbai, Maharashtra, 400706
Dr. Shantanu Deshpande	Dr. DY Patil school of medicine, Ayyapa temple road, Nerul, Navi Mumbai, Maharashtra, 400706
Dr. Keshav Kale	Dr. DY Patil school of medicine, Ayyapa temple road, Nerul, Navi Mumbai, Maharashtra, 400706
Dr. Somnath Mallakmir	Dr. DY Patil school of medicine, Ayyapa temple road, Nerul, Navi Mumbai, Maharashtra, 400706

INTRODUCTION

Coronary artery aneurysm is defined as an area of localised coronary artery dilatation with a diameter of 1.5 times greater than an adjacent normal reference segment of vessels. Coronary artery aneurysms after coronary interventions are rare, with reported incidence of 0.3 to 0.6% Drug eluting stents which locally elute anti proliferative drugs can dramatically inhibit neointimal growth , thereby suppressing restenosis but at the same time potentially causing coronary aneurysms due to other mechanisms such as re-endothelialisation , inflammatory changes of medial wall and hypersensitivity reactions and thus associated with a risk of coronary artery aneurysm formation Coronary artery aneurysms have been reported from 3 days upto 4 years after DES implantation procedures, with varying clinical features

Case

A 38 year male was admitted to the hospital for experiencing chest pain for one week which was exercise induced and relieved at rest . He was a known case of Type 2 Diabetes Mellitus and Hypertension and was on medications for the same . He had no previous cardiac history. Patient was afebrile with a blood pressure of 130/80 mmhg. Heart rate was 76/min and a respiratory rate of 20/min.His heart sounds were regular without gallops ,murmurs or rubs .

Initial ECG showed Normal Sinus Rhythm.

2DECHO findings was suggestive of LVEF 35% to 40% with IVS hypokinesia with hypokinetic apex.

Diagnostic Coronary Angiography was done which revealed 100% occlusion of the left anterior descending artery in mid segment with faint filling through collaterals and 80-90% stenosis in the ostio-proximal segment of left circumflex artery.

Coronary Angioplasty was done to LAD : The LAD lesion was dilated with 1.5x12mm, 2.5x9mm balloon at 12atm pressure for 10 seconds. The lesion was stented with 2.75x24mm Supralimus Grace stent. It was deployed at 10 atm pressure for 40 seconds in mid to distal segment and another 3x28mm Supralimus Grace was deployed at 10 atm pressure for 40 seconds in mid segment overlapping the previous stent . Post dilated with 2.75x15mm, 3.25x10mm NC balloon at 20 atm pressure for 10 secs.

Post procedure patient improved and the pain resolved . There were no electrocardiographic or enzymatic alteration observed.

Two days after the procedure the patient was discharged with a prescription of-

- Tab Aspirin 75mg 0-1-0
- Tab Ticagrelor 90mg 1-0-1
- Tab Atorvastatin 80mg 0-0-1
- Tab Ramipril+Metoprolol 25/2.5 1-0-0

2 months after the procedure the patient started experiencing chest pain which was radiating to the back and associated with profuse sweating. He was also experiencing fever spikes since 1 week. Patient was admitted to the hospital with

- Pulse 102 beats/min
- Spo2 98% on Room air
- BP-120/80 mmhg
- RR-18/min
- CVS-no gallop ,murmur or rub
- ECG-T inversion in I,avL,v1-v4
- Trop I-0.13, BNP- 345, CKMB- <1.0

Repeat 2D ECHO was done which was suggestive of coronary artery aneurysm.

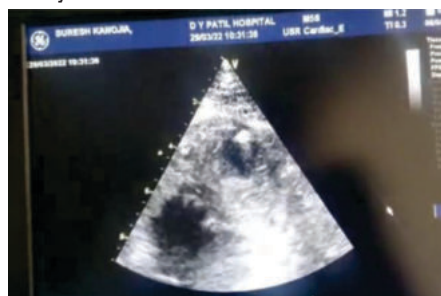


Fig.1- 2 Decho Coronary Artery Aneurysm

CT Coronary angiography was done to confirm the findings which also showed an area in the aneurysm without contrast uptake .

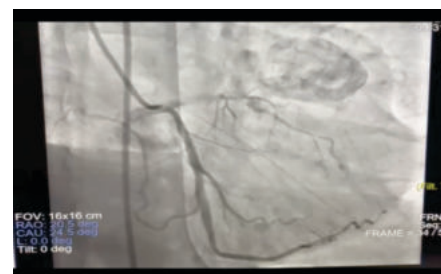


Fig.2- Coronary Angiography Showing Coronary Artery Aneurysm.

Blood culture was positive for Pseudomonas Aeruginosa
CABG was done LIMA to LAD.

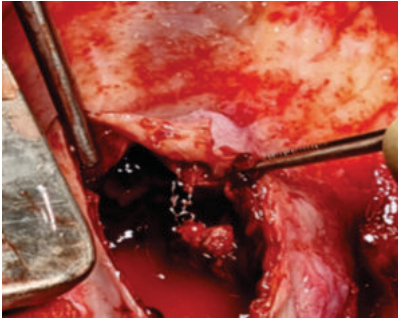


Fig.-3 Intraoperative Picture Of Aneurysm

Discharge Medications

- Tab Amoxicillin+clavulanate 625mg 1-0-1
- Tab Pantoprazole 40 mg 1-0-1

DISCUSSION

It has been reported that drug-eluting stents decrease the rate of restenosis by inhibition of vascular smooth muscle cell proliferation. The effect of Sirolimus occurs during the G1 cycle of cell proliferation and includes prohibiting cell proliferation, promoting cell death and decreasing inflammatory reaction. Therefore, the drug-eluting stent has a possibility of causing an aneurysm at the adjacent coronary vessels if stent malapposition occurs.

In addition to incomplete stent apposition, causes of intracoronary stent-related aneurysm formation can also be explained by

- Balloon dilatation over 12 atm
- localized hypersensitivity vasculitis
- coronary artery vasculitis due to reaction with the polymer of the stent.

The clinical course of coronary artery aneurysm is not related to a stent and varies from asymptomatic to angina pectoris to acute myocardial infarction. However, the mechanisms by which these conditions cause aneurysms have not been satisfactorily explained to date.

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