

Case Report

LONG TERM ANGIOGRAPHIC FOLLOWUP OF PATIENT WITH M-GUARD STENT FOR CORONARY STENOSIS WITH ANEURYSM - SAFETY AND FEASIBILITY: CASE REPORT

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ABSTRACT

Coronary aneurysm, a relatively uncommon condition may remain asymptomatic or present with complications like thrombosis, embolism and rupture. Small aneurysms are amenable to percutaneous therapy by stenting with mesh covered stent whereas large aneurysms require surgery. Our patient, a 51 yrs old male, presented with exertional angina. His angiogram revealed coronary aneurysm astride a significant stenotic lesion involving the mid LAD. Patient underwent stenting with M-Guard stent with good results. This article provides the long term angiographic followup result of the use of M-Guard stent in our patient.

Keywords: *Coronary Aneurysm, M-Guard Stent, Long Term Followup*

INTRODUCTION

Coronary aneurysm is relatively uncommon condition of the coronary arteries with an incidence of 0.3 % to 4.9% among various studies. Its association with complications such as thrombosis, embolism and rupture, provides importance to its management decision. It is treated either by surgery or by stenting. M-Guard (PET) stent has replaced the JO (PTFE) stent for small coronary aneurysmal lesions and also surgery.

CASES

51 years old gentleman presented with exertional angina since 2 years (CCS Class II). He had undergone angioplasty to RCA (right coronary artery) 12 years back and is also diabetic on oral hypoglycemic agents. His blood investigations, ECG, ECHO were normal. His treadmill test was positive for inducible ischemia.

His Coronary angiogram showed LAD: Type III vessel, mid segment has 99% intraluminal narrowing with 5.0 x 4.0 mm aneurysm astride the lesion (Figure 1). RCA: Dominant system, patent stented segment. A 0.014 x 190 cm whisper guide wire was used to cross the lesion. Stenotic lesion was



Figure 1



Figure 2

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predilated with non-compliant Sprinter balloon of 2.0 x 15mm (Figure 2). M-Guard stent of 2.75 x 24mm was deployed with an inflation pressure of 14 atm across proximal to mid LAD (left anterior descending artery) covering both stenotic and aneurysmal lesion (Figure 3&4). Patient was stable throughout the procedure.

Patient underwent check angiogram after a week which showed size of aneurysm to be 2 x 2mm (Figure 5). His hospital stay was uneventful and was discharged in a stable condition.

Patient underwent check angiogram after 18 months which showed patent stented segment with preservation of the small side branch (<2mm vessel) and disappearance of the aneurysm (Figure 6).

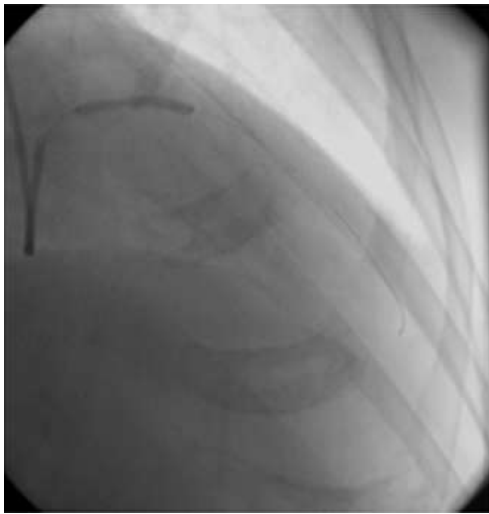


Figure 3



Figure 4



Figure 5

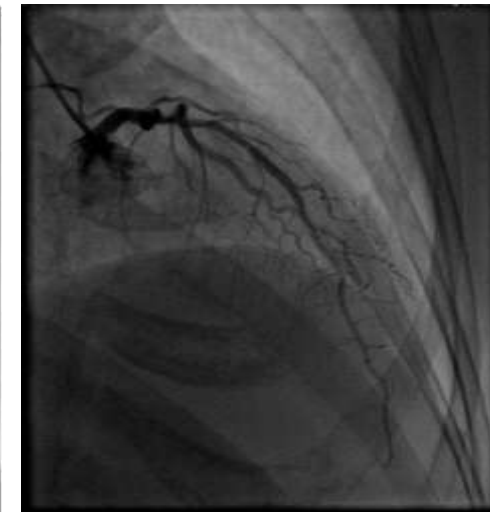


Figure 6

DISCUSSION

Coronary aneurysm is defined as a localized dilation that exceeds 1.5 times the diameter of the adjacent normal segment of artery. The incidence varies from 0.3 % to 4.9% among patients undergoing CAG in various studies (Swaye *et al.*, 1983). Coronary aneurysms cause altered flow dynamics and stasis, which predispose to thrombosis and myocardial ischemia and infarction. Coronary aneurysm either can occur alone or may be associated with stenosis. Atherosclerosis being the most common cause accounting for 50% of cases in adults (Mushabbar and Lesch, 1997; Guttu *et al.*, 2007; Demopoulos *et al.*, 1997). Males

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are more frequently affected than females. RCA is the most commonly involved followed by LAD and least by LCX. They are frequently asymptomatic or may present with acute coronary syndrome. Potential complications are thrombosis, embolism and rupture (rarely) (Swanton *et al.*, 1978).

Coronary aneurysm less than 10mm are generally amenable to percutaneous therapy with stenting and those more than 10mm require surgery. Surgery involves resection of aneurysm and CABG. Coronary stenting for aneurysm can be done either with PTFE (Jo stent) or PET (M-Guard stent). Disadvantage with PTFE stent is increased risk of in-stent restenosis, low flexibility and lack of side branch access. These were not seen with PET stent (Kaluski *et al.*, 2007; Costa *et al.*, 2008).

M-Guard stent, a stainless steel stent covered on its external surface (abluminal) by an ultra-thin Polyethylene terephthalate (PET) mesh. The microfiber net has minimal effects on the stent's crossing profile and deliverability. It traps the thromboembolic debris underneath its net or mesh. M-Guard stent has been used in various clinical settings like degenerated vein grafts, carotid and renal stenting, in STEMI patients with massive thrombus and also for aneurysms. However concern about its impact on side branch patency, restenosis and stent thrombosis prevails. There are case reports on the use of PET (M-Guard) stent for the treatment of coronary aneurysm but no long term angiographic followup studies are available to know the risks of restenosis and side branch patency. This case report provides the information on the long term (18 month angiographic followup) safety of M-Guard stent in terms of restenosis and side branch vessel patency.

Conclusion

In the present case, the stenotic as well as aneurysmal lesion were covered effectively with one stent (M-Guard stent) with good results. 18 month followup angiogram revealed patent stented segment with patent side branch and disappearance of aneurysm. PET stent use for stenosis with aneurysm was feasible, effective and safe in the patient.

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