

A Rare Case of Catheter Induced Aorto-coronary Dissection

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Abstract

Aorto coronary dissection is a rare but potentially life threatening complication of coronary artery angiogram and angioplasty. It is usually procedure related and requires prompt diagnosis and management. In this case report we aim to discuss a similar case.

Keywords: Aorto-coronary dissection; Amplatz catheter

Case Report

A 58-year-old diabetic and hypertensive man presenting with stable angina underwent coronary angiogram which revealed mid right coronary artery (RCA) severely calcified lesion. Percutaneous coronary intervention (PCI) was planned for the culprit lesions of the RCA. We used a 6 Fr Amplatz left 2 guiding catheter. Then Whisper ES wire was used to cross the lesion and a 1.5 mm semicompliant balloon to predilate the lesion. At this point of time there was pressure damp because of which the guiding catheter was withdrawn slightly. After that while taking the balloon out, the catheter again got sucked in deep inside the RCA. After rewithdrawing the catheter when angiogram was performed we saw a spiral dissection involving the proximal RCA and the wall of aortic root with compromised coronary flow (Figure 1). On nonselective angiogram there was normal flow in left main artery. We went ahead with stenting of the proximal to mid RCA with a covered stent covering the entry point of the dissection. The post-PCI angiogram showed normal flow in all coronary arteries with no progression of dissection. The patient was observed in ICU for 48 hours during which he was asymptomatic.

Discussion

Catheter-induced coronary dissection is rare albeit life threatening complication of coronary angiography and angioplasty. Based on available studies the incidence of coronary dissection involving the aortic root is about 0.02 – 0.07% [1,2]. Some of the predisposing conditions are hypertension, Marfan syndrome, congenital unicuspid and bicuspid aortic valves.

It is more commonly associated with coronary angioplasty than with diagnostic angiography. RCA angioplasty carries a higher risk for aorto –coronary dissection as compared to left coronary artery angioplasty, the mechanism of which is still not clear [3]. Some of the proposed theory regarding the higher frequency seen in RCA are greater diameter of the left coronary artery than the right, the acute angle between left coronary artery and the ascending aorta compared to nearly right angle for right coronary artery, and more smooth muscles and collagen tissues in left coronary sinus.

In our case, the etiology of aortocoronary dissection and perforation is most probably related to manipulation of the Amplatz guiding catheter. The relationship between the guiding catheter and incidence of aortocoronary perforation is controversial; some authors consider catheters like Amplatz, multipurpose and special catheters like IMA (internal mammary artery) catheter may cause dissections during catheter manipulation [4]. However, some reports demonstrated that Judkin's Right catheters were more frequently involved in dissection.

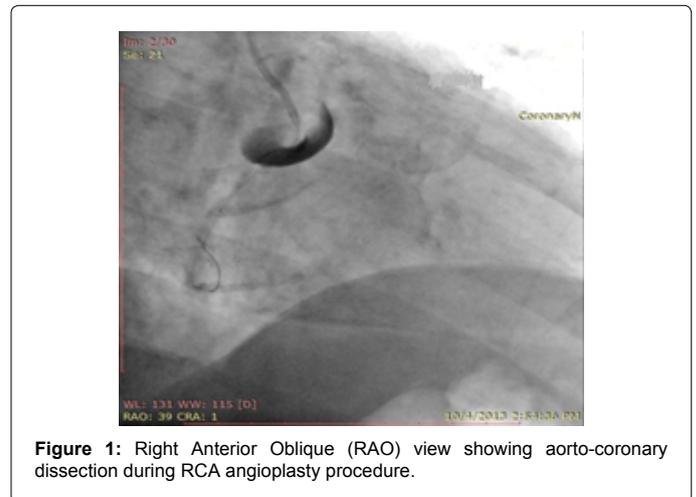


Figure 1: Right Anterior Oblique (RAO) view showing aorto-coronary dissection during RCA angioplasty procedure.

Most of the patients can be managed with stenting of the coronary dissection entry point with a covered stent, as described in our case. Rarely some patients will require prompt surgical management specially those who have dissection related acute myocardial infarction, acute aortic regurgitation, extensions of aortic dissection more than 40 mm from the coronary cusp, or cardiac tamponade [4].

References

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