Emergency CABG and Surgical Retrieval of Entrapped Coronary Stent Balloon: A Case Report

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Abstract:

Entrapment of hardware is a rare complication of PCI and its incidence is reported to be 0.2 to 0.8 percent. Percutaneous retrieval is advised first but if it failed, surgery should be attempted.

Here, we report and discuss the management of a 72-year-old man with entrapped stent balloon during PCI of right coronary artery mandating emergency surgery due to hemodynamic instability and ischemic changes.

Case Report:

A 72-year-old man with a history of acute MI underwent angioplasty two weeks ago, a stenting of a calcified right coronary artery (RCA). During his previous admission, coronary angiography had been performed which revealed two significant stenosis in LAD and stenosis in RCA and PDA.

Ad hoc successful PCI for LAD was done after angiography and PCI of RCA had been scheduled for 2 weeks later.

This diabetic patient underwent angioplasty and stenting of RCA stenosis in his next admission after receiving oral loading dose of Clopidogrel.

After stent deployment, the balloon got entrapped in RCA. At the same time, the patient developed bradycardia and hypotension associated with ischemic changes (ST elevation) in ECG.

Percutaneous retrieval of balloon was attempted but failed. At this time the Cardiac surgeon was contacted and the patient was treated with Atropine. Heart rate and blood pressure improved but ischemic changes persisted and the patient complained of severe chest pain.

The patient was transferred to the operating room. Under general anesthesia, with sternotomy incision, aortic and right atrial cannulation was done and CPB began. After administration of cardioplegia PDA was grafted by saphenous vein. The balloon was found by palpation and stent balloon attached to about 20cm length of its shaft in aorta was retrieved through an arteriotomy of RCA.

Besides chest reexploration for bleeding due to diffused oozing, the patient had an uneventful postoperative course and discharged 4 days later.

Discussion:

Hardware entrapment during PCI is a rare complication occurring in about 0.2 to 0.8 percent of cases (1).

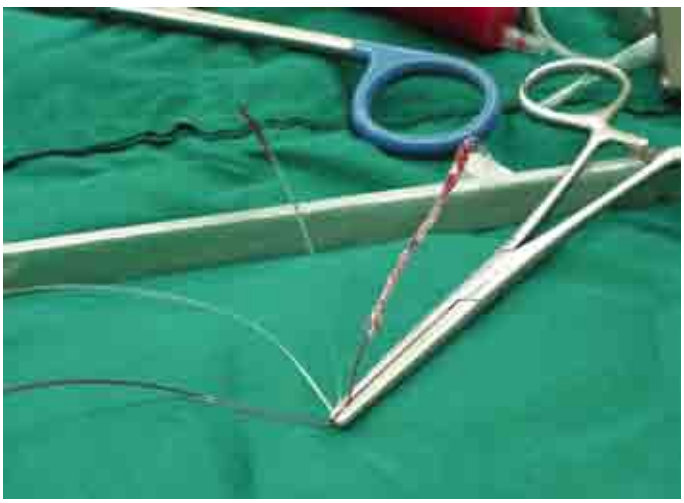
Calcified and difficult coronary anatomy may predispose to this complication.

Hardware retained intraluminally within a coronary vessel will generally serve as a nidus for endothelial injury and platelet deposition. Putting the vessel at risk for acute thrombosis when a wire or catheter is trapped, vigorous efforts at removal are sometimes attempted before a cardiac surgeon is contacted. These attempts create further risk to endothelium of an already ill vessel. Therefore, when possible, removal of the wire or catheter and downstream grafting of the coronary artery is advocated unless it can be ascertained that

the vessel is otherwise unharmed.

As Chang et al have proposed, if percutaneous attempt has been failed and surgery is planned, TEE will be very useful to locate the end of wire in aorta. If TEE has positive or equivocal finding, proximal retrieval through aortic root can be done, especially in cases of complicated coronary anatomy or pathology. If proxima approach is difficult, hardware could be amputated deep in coronary ostium. Otherwise distal retrieval through coronary arteriotomy can be performed. (2)

It should be noted that distal approach is not always straightforward, due to the presence of atherosclerosis or stent and to the prospect of further injury to the vessel. (3)



Conclusion:

In this case report, surgical retrieval of an entrapped coronary stent balloon is reported and the management of such cases is discussed.

References:

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