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Stent Embolism after Coronary Angiography: Case Report

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ABSTRACT

Endovascular interventions are widely performed of late; complications including stent embolism of arteries and veins, dislocation, or malposition of medical devices are frequently seen. Peripheral stent embolisms are generally asymptomatic, but when they cause acute ischemia or severe symptoms like claudication they must be removed. Stents can be removed not only with surgical techniques but also with endovascular maneuvers. In this case report, we state that in symptomatic peripheral arterial embolization cases, surgical intervention is the first choice for treatment due to the complexity and high risk of complications when using endovascular maneuvers.

INTRODUCTION

Endovascular interventions are widely performed; complications such as stent embolism of arteries and veins, dislocation, or malposition of medical devices are frequently seen. Stent embolism after coronary angiography is one such complication [Schechter 2013]. Dislocation of stents at peripheral or visceral arteries is seen with a rate of 0.9% to 8.4% [Siani 2008]. Dislocated devices can be found at locations like coronary arteries, femoral arteries, cervical arteries [Aïssou 2013], or renal arteries [Juszkat 2007].

In this case, we report surgical removal of a broken and dislocated stent at the deep femoral artery (DFA) bifurcation, causing embolism and ischemic symptoms.

CASE REPORT

A sixty-one-year-old male patient with a known history of hypertension and type 2 diabetes mellitus was referred to our hospital's cardiology department suffering from chest pain for three months. His medical history consisted of a percutaneous coronary intervention in 2005, with two stent implantations to the circumflex and intermediary arteries performed, and a coronary artery bypass grafting operation in 2011.

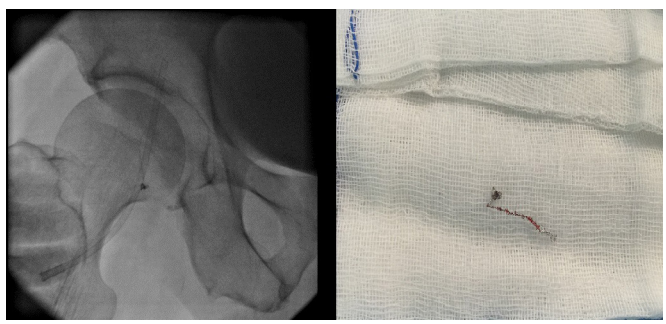
The patient underwent coronary angiography, and cardiologists decided to perform stent implantation to the native circumflex artery. While performing the procedure, as the guide wire was being removed, the stent was dislocated. Cardiologists tried to pull the stent with endovascular techniques, but the stent headed for the femoral artery. The stent was seen dislocated at the DFA bifurcation upon angiographic imaging (Figure).

An emergency operation was planned due to the patient suffering from ischemic leg pain. The right femoral region was explored. Common, deep, and superficial femoral arteries were exposed. After heparinization, arteriotomy to the deep femoral artery was made. The dislocated stent was removed (Figure). Distal and proximal arterial flow was satisfactory. Arteriotomy was closed with prolene sutures. The patient's ischemic symptoms were relieved, and the patient was discharged on postoperative day three.

DISCUSSION

Stent dislocation and embolization are frequently seen while trying to implant stents for acute angled and calcific coronary lesions. Further complications include bleeding, coronary embolization, acute myocardial infarction, peripheral vascular embolization, cerebrovascular accident, and death. The complication of stent embolism in our case was peripheral ischemia.

Peripheral stent embolisms are mostly asymptomatic, but when they cause acute ischemia or severe symptoms like claudication they have to be removed. Siani et al reported a similar case of surgical removal of a dislocated stent to the DFA after coronary stenting, which was causing ischemic symptoms [Aïssou 2013]. In our case, we also experienced stent embolism in the right femoral artery.



Angiographic image of the dislocated stent at the femoral arterial region (left); image of the removed stent (right).

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Fragmented pieces of stents can be left in situ when removal of the stent is difficult, especially in asymptomatic patients or patients with a short life expectancy. Stents can be removed not only with surgical techniques, but also with endovascular maneuvers. However, in patients with severe peripheral arteriopathy, when performing endovascular techniques, dissection, perforation, thrombosis, and distal mobilization of stents can occur. In our case, while trying to implant a coronary stent to the circumflex coronary artery, the stent dislocated, migrated to the femoral artery, and peripheral embolism occurred.

Clinical scenarios vary according to the stent's size and location. In a study performed by Schechter et al [Schechter 2013], only 5.6% of patients suffering from foreign body dislocation were found to be symptomatic. Additionally, they stated that 94% of dislocated foreign bodies can be removed with endovascular maneuvers, and only 4% need surgical intervention. In our symptomatic patient, who was suffering from ischemic leg pain, we also preferred to remove the dislocated stent surgically.

In conclusion, in symptomatic peripheral arterial embolization cases, surgical interventions are the primary choice of treatment due to the complexity and high complication risks of endovascular maneuvers.

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