

The ball is in your court

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Abstract

In this paper, we describe a rare case of a giant aneurysm of the circumflex artery that we managed. A 59-year-old female patient presented in cardiogenic shock after partial aneurysm rupture. Giant aneurysms of the circumflex artery are extremely rare entities. The optimal surgical management dictates meticulous preoperative planning and the operation should be carried out on an elective basis.

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Short title: Giant coronary aneurysm

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Abstract

In this paper, we describe a rare case of a giant aneurysm of the circumflex artery that we managed. A 59-year-old female patient presented in cardiogenic shock after partial aneurysm rupture. Giant aneurysms of the circumflex artery are extremely rare entities. The optimal surgical management dictates meticulous preoperative planning and the operation should be carried out on an elective basis.

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Coronary artery aneurysm is defined as coronary dilatation which exceeds the diameter of the normal adjacent artery segments or the diameter of the patient's largest coronary artery by 1.5 times [1]. The "giant" CAA definition is still controversial, however according to the Committee of the American Heart Association giant aneurysms are defined as those $>8\text{mm}^1$.

Herein we present we describe the surgical management of 59-year-old female patient who presented with a giant coronary aneurysm. The patient was urgently transferred to our department for management of a giant aneurysm of the left circumflex artery (LCx) measuring 10 by 12 cm (Figure 1A, B). The patient was on another hospital's surgical list waiting to be operated. The operation had delayed due to covid-related issues and the patient was experiencing daily angina-like symptoms. Upon arrival, the patient was in a critical condition due to cardiac tamponade, requiring high doses of inotropic support. She underwent urgent cardiac surgery. The operation was conducted under cardiopulmonary bypass which was established via femoral aortic and venous access. The venous cannula was later transitioned to a 2-stage right atrial cannula due to poor drainage. After median sternotomy, 500 ml of blood and clots were removed from the pericardial sac. The aneurysm had spontaneously ruptured and involved the left circumflex coronary artery, occupying most of the inferior surface of the left ventricular wall and its size was displacing the heart superiorly and anteriorly, causing compression to the adjacent arteries. The patient's preoperative echocardiogram, besides the tamponade was evident of a reduced ejection fraction. The aneurysmal sac was opened and the inflow and outflow points were suture ligated (Figure 1C). A vein graft was anastomosed end-to-side to the coronary artery distally, while the aneurysmal cavity was obliterated by multiple sutures.

The patient was weaned from cardiopulmonary bypass requiring high doses of inotropic support and intra-aortic balloon pump assistance. She succumbed several hours later in the intensive care unit. Patients suffering from coronary aneurysms are often asymptomatic. Nevertheless, sometimes depending on the size of the aneurysm, they may present with symptoms of angina². Coronary aneurysms may be complicated with rupture, thrombosis, embolism and fistula to the cardiac chambers². Most giant coronary aneurysms reported in the medical literature have involved the RCA adjacent to the right atrium³.

To the best of our knowledge, this is the one of the largest giant aneurysms ever reported in literature, involving the circumflex artery (Figure 1, D). Such aneurysms necessitate careful preoperative planning and should be operated on an elective basis.

Author contributions

DK and CA : Writing of the article

ZG : Literature review and drafting

DM: Approval of article

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Figure legends

A. Preoperative CT. The aneurysm measured 10 x12 cm. B. Coronary angiography. C. The aneurysmal sac was opened and the inflow (entry) point is visible D. Intraoperative image of the aneurysm (from patient's head)

