

A "Miraculous" Angioplasty in an Elderly Patient. Time Is Life.

Une Angioplastie "Miraculeuse" chez un Patient Agé. "Le temps c'est de la vie".

Marouane Boukhris, Hatem Najjar, Tarek Krarti, Manel Charfeddine, Faouzi Addad, Salem Kachboura

1From the Departmen of Cardiology of Abderrahmen Mami, Ariana; Faculty of Medicine of Tunis, University of Tunis El Manar, Tunisia.

Résumé

Une occlusion thrombotique du tronc commun gauche non protégé a généralement des manifestations cliniques catastrophiques telles qu'un choc hémodynamique réfractaire, des arythmies ventriculaires fatales voire une mort subite.

Nous rapportons le cas d'un patient diabétique âgé de 86 ans admis pour un état de choc cardiogénique en rapport avec une occlusion aiguë d'un tronc commun gauche non protégé avec une sub-occlusion de la coronaire droite. La présence d'un anévrisme aortique avait contre-indiqué la mise en place d'un ballon de contre-pulsion. Une angioplastie primaire a été réalisée dans l'heure suivant le début des symptômes avec un bon résultat à court et moyen terme.

Mots-clés

Thrombose aiguë, tronc commun gauche non protégé, angioplastie complexe, revascularisation

Summary

Acute unprotected left main occlusion has generally catastrophic manifestations with severe circulatory failure, fatal arrhythmias and sudden cardiac death.

We report the case of an 86-year old diabetic man admitted for cardiogenic shock due to acute left main occlusion with a sub-occlusion of right coronary artery. Intra-aortic balloon pump was contraindicated because of aortic aneurysm. As PCI was performed within one hour from symptoms onset, the immediate and mid-term patient outcome was good.

Keywords

Acute unprotected left main occlusion; complex PCI; revascularization delay.

Correspondance

Marouane Boukhris, MD, FESC

Departmen of Cardiology of Abderrahmen Mami, 2008 Ariana

Tel: +216 22557125

E-mail: mar1bou@hotmail.com

COMMENTS

An 86-year old diabetic patient was admitted for cardiogenic shock within one hour from the onset of a typical chest pain. A history of abdominal aorta aneurysm of 5 cm was reported by relatives. Electrocardiogram showed ST-segment elevation in the following leads: V1-V3, DI, aVL and avR, with ST-segment depression in inferior leads (Figure 1).

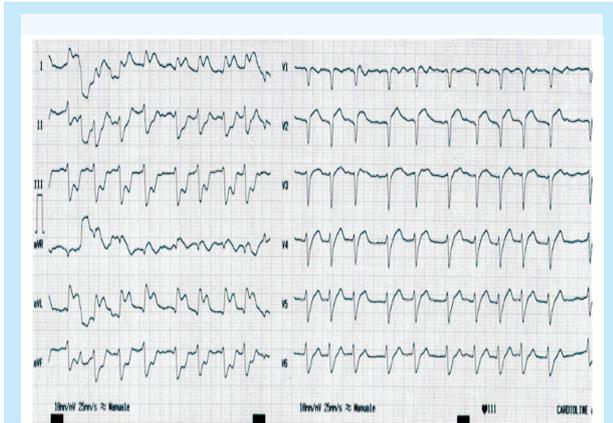


Figure 1 : Electrocardiogram showing ST-segment elevation in the following leads: V1-V3, DI, aVL and avR, with ST-segment depression in inferior leads.

The patient received 250 mg of aspirin, 5000 UI of heparin, loading dose of clopidogrel (600 mg) and continuous infusion of catecholamines. Emergency primary percutaneous coronary intervention (PCI) was indicated, and the patient immediately transferred to the cath lab. A right femoral 6Fr access was performed. Despite the hemodynamic shock, intra-aortic balloon pump (IABP) was not employed because of the aortic aneurysm. Coronary angiography showed a thrombotic occlusion of calcified distal left main stem with Thrombolysis In Myocardial Infarction Flow (TIMI) 0 (Figure 2A), and a sub-occlusion of the second segment of an aneurysmal calcified right coronary artery (RCA) (Figure 2B). A 6-Fr EBU 4 guide catheter was introduced in left main, and a Runthrough guidewire (Terumo, Japan) crossed the lesion and was inserted in left anterior descending (LAD). After pre-dilation, a drug-eluting stent (3.0 x 18mm) was implanted in distal left main and LAD, with final TIMI 3 flow (Figure 3). Thereafter, RCA was engaged with Judkins right 4 guide catheter. Because of poor back-up, Guideliner V3 Catheter (Vascular Solutions Inc., Minneapolis, MN, USA) was employed, allowing balloon and stent delivery. Angioplasty with a 4.0 x 18 mm DES was performed with a satisfactory angiographic result after post-dilation (Figure 4). Dual anti platelet therapy [clopidogrel (75 mg per day), and aspirin (100mg per day)] was prescribed.

Echocardiography showed a moderately impaired left ventricular ejection fraction (42%) with anterior wall hypokinesia. In-hospital stay was uneventful and the patient was discharged after 6 days. The patient was asymptomatic after 6 month- uneventful follow up period.

Although the gold standard for the treatment of unprotected left main coronary artery (ULMCA) disease remains coronary artery bypass grafting (CABG), the gold standard for the treatment of acute myocardial infarction is percutaneous coronary intervention (PCI) [1,2]. Indeed, percutaneous revascularization of an occluded ULMCA can be performed much more rapidly and less invasively compared with CABG [3]. Patients with acute ULMCA occlusion has generally catastrophic manifestations with severe circulatory failure, fatal arrhythmias and sudden cardiac death [4]. Hence, they are poor surgical candidates with high surgical mortality risk, rendering generally PCI the only and last option to attempt.

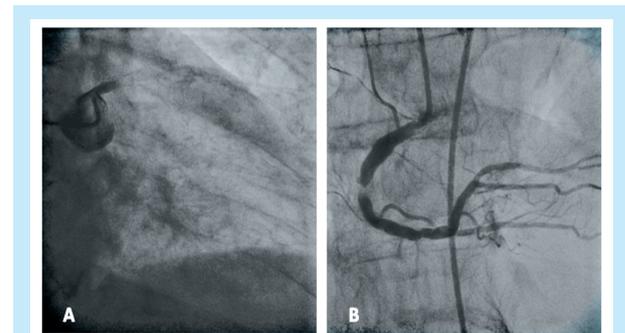


Figure 2 : A/ Caudal view showing acute ULMCA occlusion. B/ Left view showing a sub-occlusion of the second segment of an aneurysmal calcified RCA.

Abbreviations. RCA=right coronary artery; ULMCA=unprotected left main coronary artery.

Despite the age, the comorbidities, the RCA sub-occlusion, the hemodynamic shock, and the contraindication for IABP use, the good outcome of our patient was mainly due to the short delay from symptom onset to PCI. Indeed, time from presentation to revascularization is considered to be one of the main advantages of PCI over CABG. Although Grundeken et al. [5] showed that longer door-to-treatment time associated with higher 30-day survival, this paradoxical effect might be explained by the fact that those who present in shorter time showed often more critical status.

In case of hemodynamic shock and multivessel disease, the need for complete revascularization remains debatable. Indeed, although it has been assigned a class IIa-C in the last ESC guidelines [6], recent data are more in favor of only culprit lesion revascularization in the

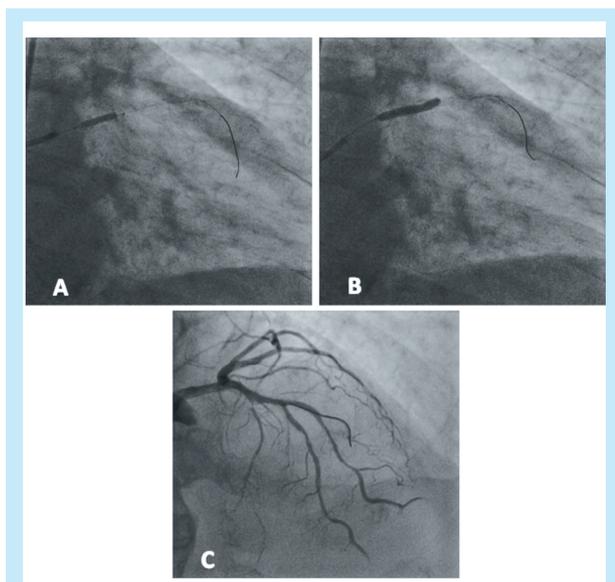


Figure 3 : A/ Predilation of ULMCA. B/ DES implantation (3.0 x 18mm) in distal left main and LAD. C/ Good final angiographic result with TIMI flow 3.

setting of hemodynamic shock [7,8]. In a meta-analysis of 10 observational studies including 6051 patients with multivessel disease and hemodynamic shock following acute myocardial infarction, immediate multivessel had no significant clinical benefit in comparison with culprit lesion only PCI [7]. In the very recent randomized CULPRIT SHOCK trial, the 30-day risk of a composite of death or severe renal failure leading to renal-replacement therapy was lower among those who initially underwent PCI of the culprit lesion only than

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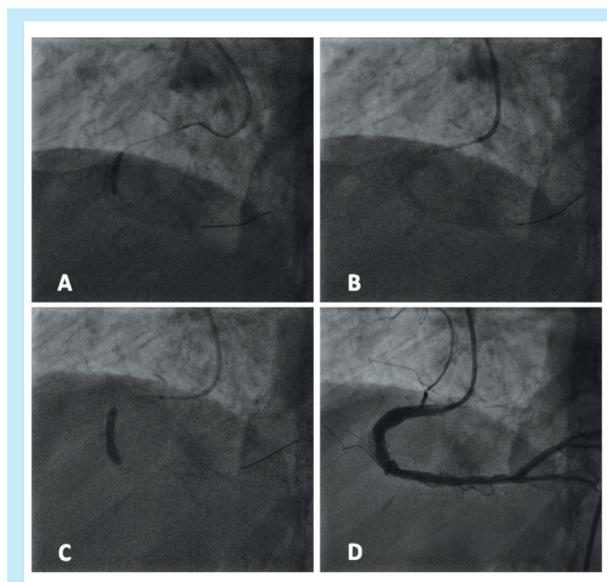


Figure 4 : A/ Guideliner V3 Catheter use to improve the support and lesion predilation. B/ Stent delivery through Guideliner V3 Catheter. C/ DES implantation (4.0 x 18mm). D/Satisfactory final result after post-dilation.

among those who underwent immediate multivessel PCI [8]. In our patient (performed before the publication of the last trial), we opted for an immediate complete revascularization strategy.

To conclude, a short delay is an important prognosis factor for PCI in the setting of acute myocardial infarction, particularly in case of ULMCA occlusion or thrombosis. Therefore, all physicians should always take into consideration the following dogma : “time is myocardium; time is life”.

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