

IMAGE CHALLENGE

Rare but unforgettable cause of hypotension

CLINICAL INTRODUCTION

A man in his 70s with previous history of hypertension and dyslipidaemia with diagnosis of posterior myocardial infarction was admitted directly to catheterisation laboratory to perform primary angioplasty (prehospital ECG has sown in [figure 1](#)). On arrival, the patient was sweating and lethargic; his blood pressure was 60/45 mm Hg. First invasive pressure tracing was showed in

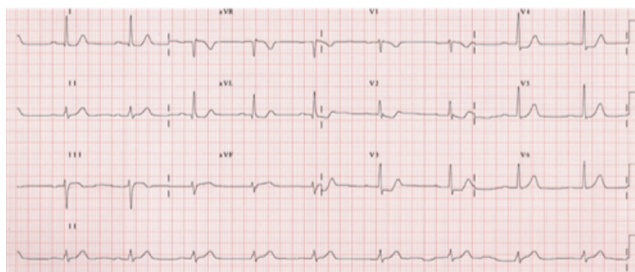


Figure 1 Prehospital 12-lead electrocardiogram showing ST.

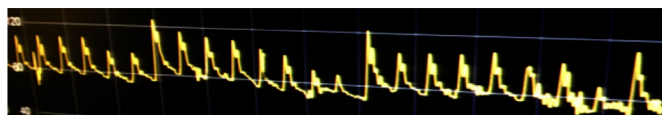


Figure 2 Invasive pressure tracing.



Figure 3 Coronary angiography showing total occlusion of obtuse marginal artery.

[figure 2](#). The coronary angiography showed total occlusion of obtuse marginal artery in proximal segment ([figure 3](#)).

QUESTION

What to do next?

- Emergent pericardiocentesis.
- Implantation of intra-aortic balloon counterpulsation.
- Start perfusion of glycoprotein IIb/IIIa inhibitors.
- Angioplasty of culprit artery.

For answer see page 1704

Rare but unforgettable cause of hypotension

For question see page 1657

DISCUSSION

The key to correct diagnosis in this case is a presence of severe hypotension and *paradoxus* pulse in pressure tracing (figure 2). Echocardiography was immediately performed and revealed a large and dense pericardial effusion suggestive of hemopericardium (answer A).

Left ventricular free wall rupture (LVFWR) is an infrequent complication (<1%) of acute myocardial infarction (MI), but it is associated with a high mortality.^{1,2} Characteristically, LVFEW occurs in relatively elderly patients, with previous history of hypertension, and in most cases, the MI is the first one recorded, and it is usually transmural. Generally, history of persistent or recurrent chest pain is present and not infrequently these patients experience delay in admission to hospital.¹ Echocardiogram should be performed as soon as possible to assess the presence of a pericardial effusion. Once the diagnosis of myocardial rupture is made, management starts with aggressive volume resuscitation, inotropic and vasopressor support and even percutaneous circulatory support. Furthermore, the patient can undergo a surgical repair of the rupture with pericardial patch. A weakened necrotic surrounding myocardium is a weak anchoring site for sutures in surgical repair; consequently, the

outcome is poor with mortality rates in the order of 20%–75%.^{2,3} In this case, the patient was initially stabilised with aggressive colloidal solution infusion and emergent pericardiocentesis and soon after transferred to the operating room. After drainage of bloody fluid, four points of rupture were present at inspection (figure 4). A pericardial patch was sutured and glued in place over the tear.

Ana Vera Vera Marinho ¹, Francisco Hidalgo,² Manuel Pan²

¹Cardiology, Centro Hospitalar e Universitario de Coimbra EPE, Coimbra, Portugal

²Cardiology Department, Reina Sofia University Hospital, Cordoba, Spain

Correspondence to Dr Ana Vera Vera Marinho, Cardiology, Centro Hospitalar e Universitario de Coimbra EPE, Coimbra 3000-075, Portugal; ana.vera.marinho@gmail.com

Contributors I approved.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Parental/guardian consent obtained.

Provenance and peer review Not commissioned; externally peer reviewed.



OPEN ACCESS

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

© Author(s) (or their employer(s)) 2020. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.



To cite Marinho AVV, Hidalgo F, Pan M. *Heart* 2020;**106**:1704.

Heart 2020;**106**:1704. doi:10.1136/heartjnl-2020-316636

ORCID iD

Ana Vera Vera Marinho <http://orcid.org/0000-0003-3330-4943>

REFERENCES

- Figueras J, Cortadellas J, Soler-Soler J. Left ventricular free wall rupture: clinical presentation and management. *Heart* 2000;**83**:499–504.
- Ibanez B, James S, Agewall S, et al. 2017 ESC guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation. *Eur Heart J* 2018;**39**:119–77.
- Figueras J, Alcalde O, Barrabés JA, et al. Changes in hospital mortality rates in 425 patients with acute ST-elevation myocardial infarction and cardiac rupture over a 30-year period. *Circulation* 2008;**118**:2783–9.



Figure 4 Surgical view of wall rupture after pericardial drainage.