

CLINICAL IMAGE

Myocardial infarction following repair of a ruptured heart

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Abstract

Penetrating chest trauma can lead to the cardiac rupture and coronary artery damage, which causes a high mortality rate (1). Most of the patients with penetrating cardiac trauma die at the scene of the accident (1). Coronary artery (CA) injuries are rare but highly lethal (2). Also, CA injury may occur during repair of a ruptured heart as in our reported case.

KEYWORDS

chest trauma, coronary artery injury, myocardial infarction

1 | CLINICAL FEATURE

The patient was a 40-year-old man who suffered from penetrating heart trauma two days before being referred to us. He had undergone repair of tearing at a hospital outside the city. He was still complaining of chest pain. Q-wave and ST elevation in v1-v3 were seen. He was referred with suspicion of damage to left anterior descending artery (LADA).

Vital signs were stable. Echocardiography revealed antero-septal akinesia with left ventricular ejection fraction (LVEF) 30%. In angiography, LADA was cutoff at mid-part. Any attempt at angioplasty was unsuccessful (Figure 1). Assuming the artery was ligated during repair and due to the fact the patient was stable, we decided to follow him, so discharged him in good condition after three weeks.

Two months later, he complained of chest pain. Echocardiography revealed LVEF 50%. According to angiography (Figure 2), he became a candidate for bypass surgery. The surgeon had reported ligation of LADA by some sutures during previous repair. After a week, he was discharged in good condition.

2 | DISCUSSION

Penetrating chest trauma can lead to cardiac rupture.¹ LADA is the most commonly injured artery.² Heart injury might be complex, even in follow-up. Any emergency repair might have consequences, such as ligating of an artery, especially in non-equipped facilities.

ACKNOWLEDGMENTS

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CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Zh. T. is the corresponding author. H. V. and Zh. T. diagnosed and followed the patient and conceived of the case report, and took full responsibility for the contents of this manuscript.

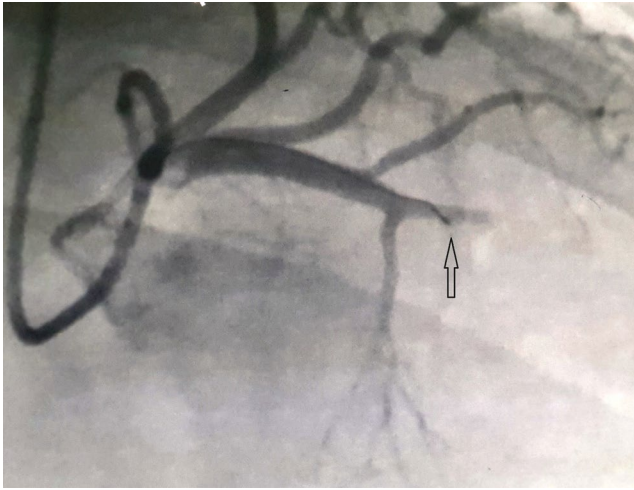


FIGURE 1 Coronary angiography at admission day; angioplasty by crossing a 0.014" wire was failed.

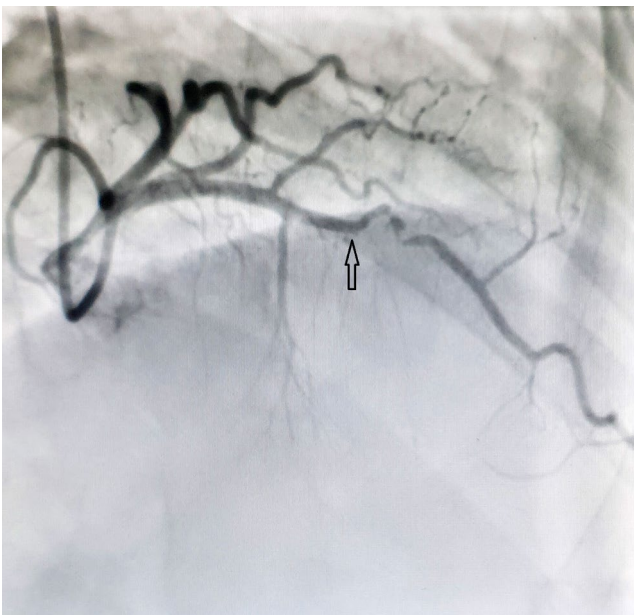


FIGURE 2 Coronary angiography after 2 months; LADA had good distal run-off after previous site of occlusion.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

REFERENCES

1. Salehian O, Teoh K, Mulji A. Blunt and penetrating cardiac trauma: a review. *Can J Cardiol.* 2003;19(9):1054-1059.
2. Atkins BZ, Salomone JP, Subramanian A, Burke JR. Management of traumatic coronary artery injuries: advantages of off-pump coronary artery bypass. *Eur J of Trauma and Emerg Surg.* 2010;36(4):380-384. <https://doi.org/10.1007/s00068-009-9063-7>

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