

IMAGES IN EMERGENCY MEDICINE

Imaging

Man with chest pain

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KEYWORDS

acute coronary syndrome, cardiopulmonary arrest, chest compression, coronary artery bypass grafting, extracorporeal cardiopulmonary resuscitation, heterotopic ossification, postoperative mediastinitis

1 | CASE PRESENTATION

A 69-year-old man who experienced anterior chest pain for 12 hours requested a transfer to our center via ambulance. He had a medical history of acute coronary syndrome treated 15 years prior by coronary artery bypass grafting. During transportation to the hospital, the ambulance crew could not detect his pulse, and he went into cardiopulmonary arrest. The crew started both manual and mechanical (LUCAS2) cardiopulmonary resuscitation (CPR). However, the crew could not achieve enough compression depth for effective CPR because of an extremely stiff thorax. During the resuscitative efforts, the cardiac monitor showed pulseless electrical activity. We initiated extracorporeal CPR in the emergency department 42 minutes after initial arrest. Percutaneous coronary intervention was performed at 80 minutes after initial arrest.

2 | DIAGNOSIS

2.1 | Heterotopic ossification of sternum and costal cartilage

Hypoxia, acidosis, or low levels of micronutrients in the injured tissue can promote angiogenesis and heterotopic ossification.¹ These factors

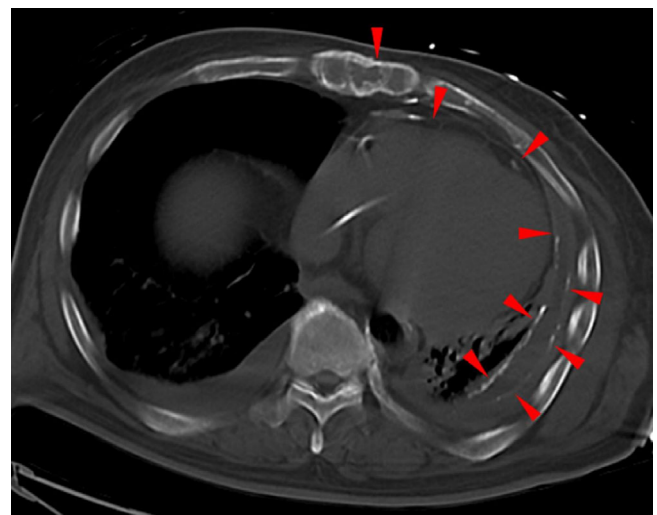


FIGURE 1 Computed tomography findings on admission. Severe ossification of the left costal cartilage and sternum (red triangle head) was revealed

may have affected the left costal cartilage and sternum secondary post-operative mediastinitis (Figure 1).

He died on the tenth day after cardiopulmonary arrest. However, we speculate that stabilizing hemodynamics with extracorporeal CPR

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is possible. We should consider extracorporeal CPR in cases of ineffective chest compression.

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How to cite this article: Yoshiyama N, Okada H, Ushikoshi H, et al. Man with chest pain. *JACEP Open*. 2020;1:1767–1768.
<https://doi.org/10.1002/emp2.12296>