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# Rupture of a papillary muscle occurring as a complication of an acute myocardial infarction: a case report

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**Introduction:** Acute myocardial infarction (AMI) represents one of the most common and severe cardiovascular conditions, and despite progress in diagnosis and treatment, it can still be accompanied by the development of serious complications. Mechanical complications stand out among them, which are associated with an increased risk of death and require timely recognition and urgent treatment.[1,2] One of the rare but extremely dangerous mechanical complications of an acute myocardial infarction is papillary muscle rupture.

**Case report:** This paper presents the case of a patient diagnosed with heart failure following an inferoposterior ST-elevation myocardial infarction, accompanied by elevated renal parameters and the development of cardiogenic shock. Following cardiopulmonary resuscitation, the patient was intubated and placed on mechanical ventilation. Due to unrecordable blood pressure, noradrenaline therapy was initiated, resulting in improved hemodynamic stability. Following the development of anuria and cardiac decompensation, hemodialysis was performed. Repeat echocardiography revealed complete rupture of the posteromedial papillary muscle head, resulting in a flail anterior mitral valve leaflet and severe mitral regurgitation, with persistent cardiogenic shock. Due to the patient's critical condition and diagnosis, the patient was transferred to a tertiary care centre for cardiac surgery.

**Conclusion:** Papillary muscle rupture is a rare but life-threatening complication of acute myocardial infarction that requires prompt recognition and urgent treatment. The onset of acute severe mitral regurgitation can lead to rapid hemodynamic deterioration, pulmonary oedema, and cardiogenic shock. Echocardiography plays a key role in early diagnosis, while hemodynamic stabilization and urgent surgical intervention are essential for successful patient management. Despite advances in diagnostic and therapeutic approaches, this complication remains associated with high mortality. Therefore, early recognition, multidisciplinary collaboration, and timely therapeutic decision-making are crucial for improving patient outcomes.

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