

## Case Report

# Left ventricular pseudoaneurysm due to patch dehiscence after ventricular septal rupture repair

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## ABSTRACT

Ventricular septal rupture is a rare complication of acute myocardial infarction and has a high mortality. We present a case of 52-year-old male patient with left ventricular pseudoaneurysm due to patch dehiscence after surgical repair of post-myocardial infarction ventricular septal rupture.

**Keywords:** Patch dehiscence, Pseudoaneurysm, Ventricular septal rupture

## INTRODUCTION

Ventricular septal rupture is a rare mechanical complication of acute myocardial infarction which usually occurs within the first week and has a high mortality.<sup>1</sup> In the prethrombolytic era, its incidence was 1% - 3% of acute myocardial infarction presentations.<sup>2</sup> The incidence reduced significantly to 0.17% – 0.31% in the era of thrombolysis and percutaneous coronary intervention.<sup>3-5</sup> Amin et al described a case of VSR and intraseptal pseudoaneurysm complicating acute myocardial infarction diagnosed by cardiac MRI.<sup>6</sup>

## CASE REPORT

A 52-year-old male patient was admitted in emergency of our institution with complaints of retrosternal chest pain and shortness of breath for three days. He gave history of surgical patch closure of ventricular septal rupture (VSR) and coronary artery bypass grafting (CABG) to the left anterior descending artery for acute anterior wall myocardial infarction complicated with apical VSR at another centre 18 days back. There was 70% lesion in proximal left anterior descending artery in coronary angiogram of the patient at that time. At our centre physical examination of the patient revealed pulse rate of

120/min, systolic blood pressure of 70 mm Hg, raised jugular venous pressure and grade 3/6 harsh holosystolic murmur along left sternal border. Electrocardiogram revealed serial changes of anterior wall myocardial infarction.



**Figure 1: Two-dimensional transthoracic echocardiographic parasternal long-axis view showing VSR, pseudoaneurysm of left ventricle and patch dehiscence.**

Transthoracic echocardiogram was performed which revealed severe hypokinesia of apical, mid anterior and

anteroseptal wall, left ventricular systolic dysfunction with left ventricular ejection fraction of 25%, residual VSR at apex with left to right shunt with peak pressure gradient of 20 mm Hg and pseudoaneurysm of left ventricle due to patch dehiscence as shown in parasternal long-axis view (Figure 1) and apical four-chamber view (Figure 2).



**Figure 2: Two-dimensional transthoracic echocardiographic apical four-chamber view showing VSR, pseudoaneurysm of left ventricle and patch dehiscence.**

The patient was managed conservatively with inotropes, vasodilators, diuretics and antibiotics as he refused for redo surgery and percutaneous device closure of residual VSR, but he deteriorated and finally died after five days.

## DISCUSSION

There is a tendency of VSR across apical septum in anterior wall myocardial infarction and of basal septum in inferior wall MI.<sup>7</sup> In suspected hemodynamically unstable patients of AMI, careful echocardiographic evaluation reveals the abnormality, as we did in our case. Emergency surgical repair remains the mainstay of treatment for post-infarction VSR but is associated with high operative mortality of 39.5% at 30-days, an overall survival of 44.4%  $\pm$  8.4% at 10 years follow up and 23.7% incidence of postoperative residual shunt.<sup>8</sup>

Patch dehiscence, development of new VSR or an overlooked second VSR are among the important causes of recurrence. Percutaneous device closure of post-myocardial infarction VSR is a reasonable effective treatment for selected cases but have higher 30-day mortality in primary VSR cases (42%) as compared to post-surgical residual VSR cases (11%).<sup>9</sup> Preoperative cardiogenic shocks and early post-infarction septal rupture carry a worse prognosis. Achieving haemodynamic stability prior to surgery may be beneficial but prolonged attempts to improve patient's stability are hazardous.<sup>10</sup> Therefore early treatment of post-myocardial VSR is recommended. Our patient could

not be survived because he refused for redo surgery and percutaneous device closure of residual VSR.

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