

A Rare Case of Acute ST Segment Elevation Myocardial Infarction During Crusting Stage of Chicken Pox

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Summary

Incidence of Varicella zoster infection in adults is rising with increase in complications. Cardiac complications are rare and mainly present as myocarditis. Acute myocardial infarction complicating chicken pox is very rare, hence reported. Here we report a case of chicken pox presenting with acute inferior wall ST segment elevation myocardial infarction during its crusting stage.

Case report

A 52 years old man presented with complaint of severe diffuse chest pain associated with profuse sweating of 6 hours duration. He had a history of recent chicken pox with onset of rash 13 days back. On physical examination he was a febrile with pulse = 40/minute, BP= 150/90 mmHg, RR= 18/min and canon waves in JVP. Chicken pox rash was present all over the body and was in crusting stage. 12 lead electro cardiogram showed A-V dissociation suggestive of complete heart block (CHB) with junctional escape rhythm and ventricular rate of 48/min. ST segment elevation was present in leads II, III, aVF, V5-6 with reciprocal ST segment depression in leads I, aVL

(figure-1). These findings were suggestive of acute infero lateral wall ST segment elevation myocardial infarction (STEMI) with CHB. 2D echocardiography showed hypo kinetic right coronary artery territory with moderate LV dysfunction. Primary PCI with temporary pacemaker implantation was planned. Patient had cardiac arrest on arrival in the cardiac catheterization laboratory. Monitor showed a systole. CPR was started. Inj atropine, adrenaline was given. Patient was resuscitated after 40 minutes of CPR. Meanwhile patient was incubated and was started on mechanical ventilation; temporary pacemaker lead was positioned at RV apex (figure-2). As patient was in hypotension despite high doses of ino tropes- dopamine and nor adrenaline, intra aortic balloon pump was placed for support (figure-2). Coronary angiography revealed proximal 100% thrombotic occlusion of dominant right coronary artery (figure-3). Lesion was crossed with PTCA wire and direct stenting done with 3x18 mm Xience Prime (figure-4). TIMI III flow restored in distal RCA. Patient's hemo dynamics improved and IABP was removed after 12 hours. Gradually ino tropes were tapered, temporary pacemaker was removed, and he was weaned off from ventilator support after 4 days. Patient recovered and went home walking.

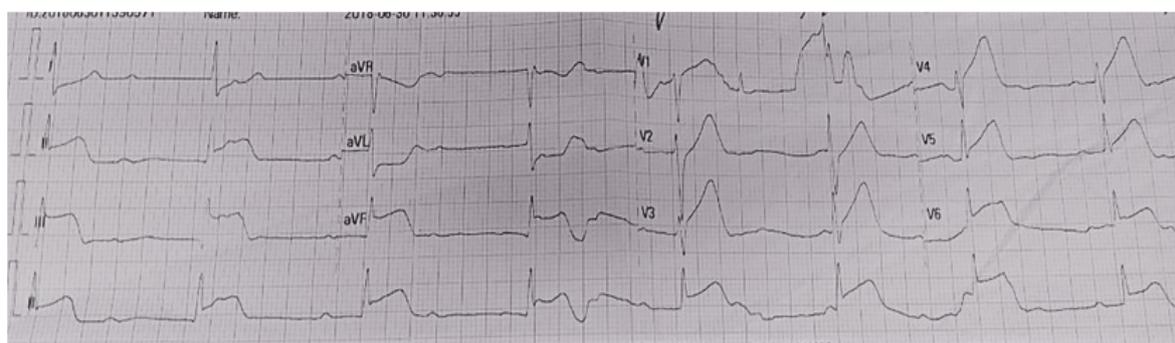


Figure 1: 12 lead surface electro cardiogram showing complete A-V dissociation suggestive of complete heart block (CHB) with junctional escape rhythm and ventricular rate of 48/min. ST segment elevation is present in leads II, III, aVF, V5-6 with reciprocal ST segment depression in leads I, aVL suggestive of acute inferior wall ST segment elevation myocardial infarction.

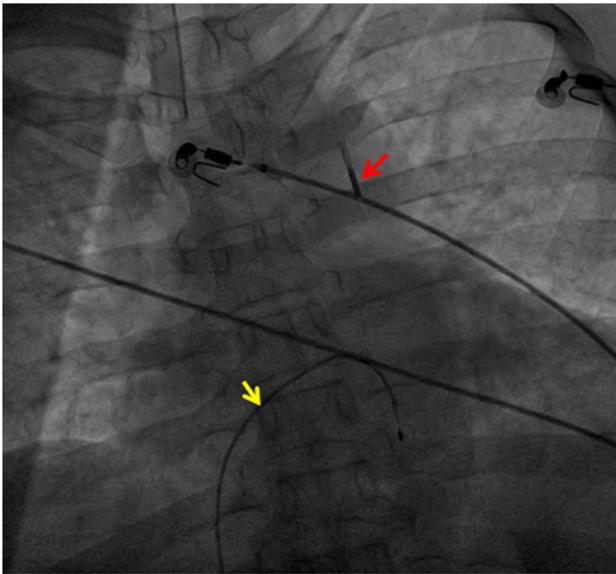


Figure 2: Fluoroscopy in antero posterior (AP) view. Yellow arrow points towards temporary pacemaker lead positioned at right ventricular apex. Red arrow points towards intraortic balloon (IABP balloon).

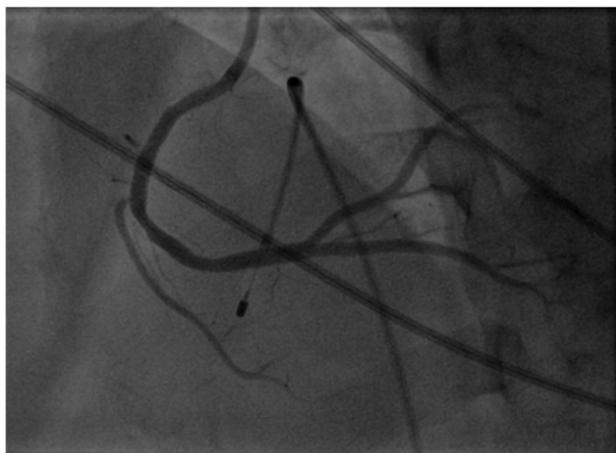


Figure 4: Left anterior oblique 60° angiographic view showing good distal flow in right coronary artery after percutaneous intervention.

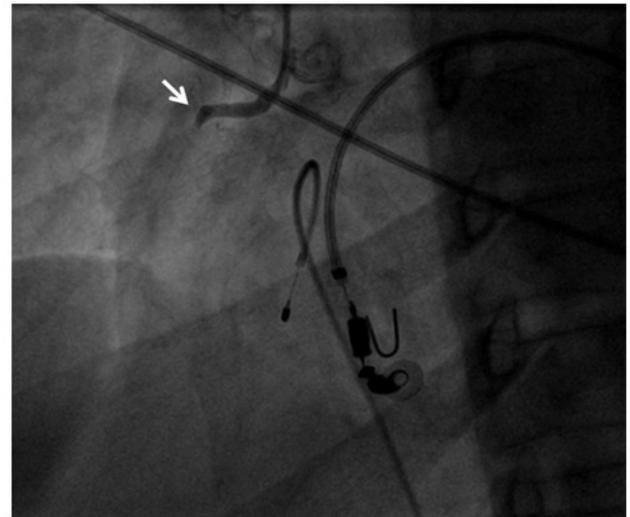


Figure 3: Left anterior oblique 60° angiographic view showing proximal 100% occlusion of right coronary artery

Cardiac involvement in Varicella infection is rare. Herpes zoster could also produce systemic inflammation, autoimmune responses, or hemodynamic changes leading to cardiovascular events.⁵⁻⁷ Varicella myocarditis may be asymptomatic or can manifest as arrhythmia, heart failure and progress to dilated cardio myopathy.⁸⁻¹⁰ In some cases, clinical manifestations, electrocardiographic and laboratory findings simulate myocardial infarction. Pericardial involvement leading to pericarditis and secondary pericardial effusion may result in cardiac tamponade or chronic pericardial constriction.¹¹

Acute coronary syndrome (ACS) may also occur after primary infection caused by Varicella infection has been resolved.¹² Migration of VZV from the neurons to the cerebral and coronary vasculature may lead to a local inflammatory response, causing vessel occlusion and ischemia.¹³ Our patient presented with chest pain and was diagnosed to have acute inferior wall ST segment elevation myocardial infarction with complete heart block in the crusting phase of chickenpox. Hence, chest pain should not be ignored in patients with chickenpox.

Discussion

Varicella zoster is a common disease with the majority of cases occurring in childhood. It is very contagious disease with an attack rate >85% after exposure. Disease is usually benign in children upto 12 years of age, but can be severe in adults and life threatening in the immunocompromised.¹⁻³ Complications are more common in adults and range from bacterial super infection of the skin lesions, arthritis, osteo myelitis, thrombocytopenia, pneumonitis, hepatitis to central nervous system manifestations including cerebellar ataxia, meningo encephalitis and intracranial vasculitis.⁴

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