

Case Report

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A Rare Case of Varicella Pneumonia with Acute Coronary Syndrome and Lower Limb Arterial Thrombosis



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Abstract

Unlike in children, where chickenpox is generally a non-complicated disease, adult chickenpox (varicella) can have serious complications. Thrombotic complications of the varicella zoster are rarely observed. There is one case report of varicella complicated by myocardial infarction. We present a case of adult varicella who developed complications of peripheral artery thrombosis as well as acute coronary syndrome, requiring angioplasty.

Introduction

Chickenpox (Varicella) is a benign illness caused by Varicella-Zoster virus and primarily manifests in childhood and is quite infrequent in adults. Most complications and serious cases are observed in adults [1]. These include pneumonia, encephalitis, cardiac arrhythmias, seizures, rare neurological sequelae including optic neuritis and transverse myelitis [2]. Thrombotic complications of the varicella zoster are rare [3,4]. A variety of hematological complications including thrombocytopenia, purpurafulminans and disseminated intravascular coagulopathy have also been reported in children with varicella [2-4].

Case Report

A 38 years old nonsmoker male was admitted with a vesicular rash over the face, chest and abdomen since 3 days. There was associated low grade fever (100 F) and dyspnea at rest. He had a blood pressure of 120/60mm Hg, pulse at 118/min, respiratory rate of 32 and Saturation (SpO₂) of 88% on 6 litres oxygen via face mask. His ABG revealed hypoxemia with a pH of 7.45, pO₂ of 58.1 mmHg, pCO₂ of 36mmHg. Chest radiograph revealed bilateral nodular opacities with specks of calcification (Figure

1). His past and family history was unremarkable. His Complete blood count revealed leucocytosis, kidney and liver function tests, Lipid and thyroid profile were within normal limits.



Figure 1: Chest radiograph showing bilateral nodular opacities with specks of calcification.

Contrast CT thorax with CT pulmonary angiography was suggestive of bilateral pneumonia (Figure 2). Patient was treated as varicella pneumonia and initiated on acyclovir along with non-invasive ventilation and supportive intensive care. Tzank

smear from vesicles revealed multinucleate giant cells (Figure 3). Blood and urine cultures were sterile

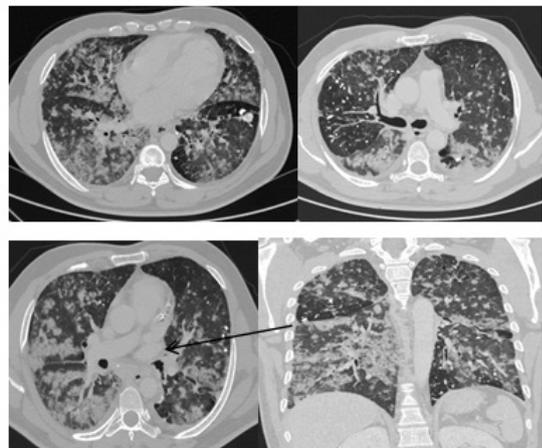


Figure 2: CECT thorax with CT pulmonary angiography showing bilateral confluent and discrete areas of consolidation with multiple calcified nodules in both lungs (arrows).

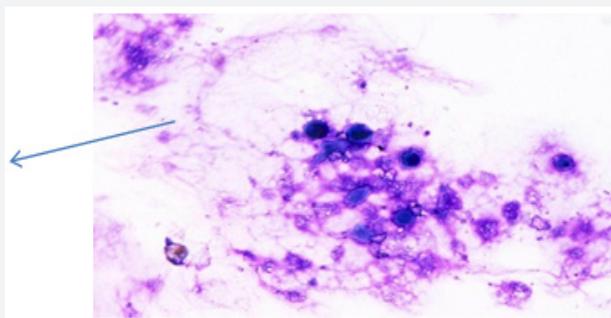


Figure 3: Tzank smear from skin vesicles showing multinucleate giant cells (arrow).

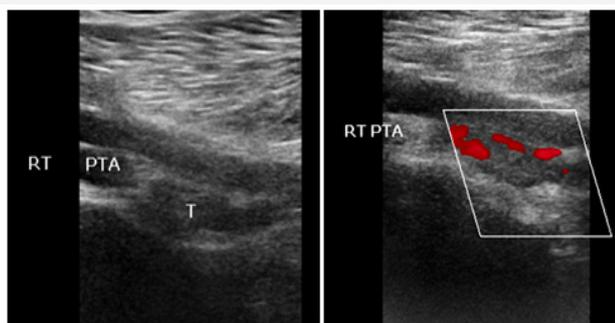


Figure 4: Ultrasound Doppler of both limbs revealed a hypoechoic thrombus (15x8 mm) in the right tibial artery and acute thrombus in proximal tibial artery.

On the second day of hospitalization, patient's right lower limb became pale with signs of ischemia. Ultrasound Doppler of both limbs revealed a thrombus in right tibial artery and proximal tibial artery (Figure 4). CT lower limb peripheral angiography confirmed intraluminal thrombosis in right tibio-peroneal trunk (Figure 5). The same day our patient also developed acute left

sided chest pain. Electrocardiogram was consistent with ST elevation myocardial infarction (STEMI) (Figure 6) and cardiac biomarkers like Creatinine phosphokinase-MB, troponin I and Pro BNP were elevated. 2D Echo showed regional wall motion abnormality in anterior wall of left ventricle.

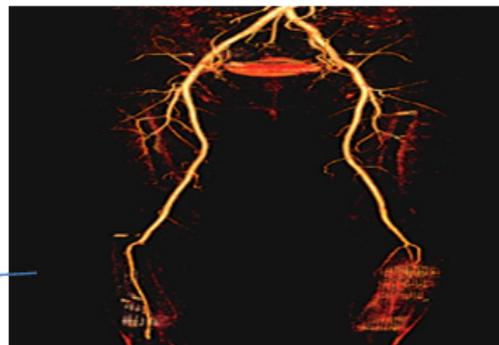


Figure 5: CT lower limb peripheral angiography showing intraluminal thrombosis in right tibio-peroneal trunk (arrow).

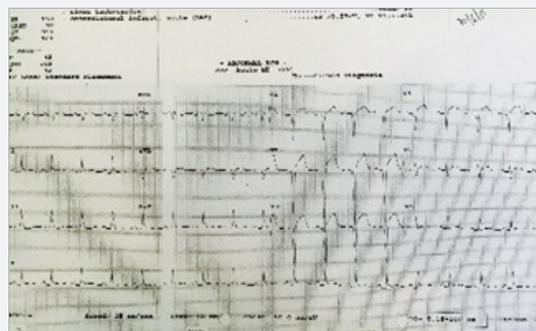


Figure 6: Electrocardiogram showing ST elevation Myocardial Infarction.

Patient was initiated on intravenous heparin infusion with APTT monitoring. A coronary angiography was also performed which revealed double vessel disease having long segment stenosis (90%) in mid portion in Left anterior descending(LAD) and right coronary artery (70% stenosis). Percutaneous transluminalangioplasty (PTCA) to LAD was done. Thrombophilia profile (Protein C, S and Antithrombin III) and Lupus anticoagulant antibody were within normal range. Vasculitis markers like Anti-nuclear antibody (ANA), Anti-nuclear Cytoplasmic antibodies (cANCA, pANCA) were negative. Gradually his limb perfusion improved and cardiac status stabilized. A Review Transthoracic Echo-Doppler post PTCA done on the 8th day showed no regional wall motion abnormality and normal cardiac ejection fraction. Follow-up Doppler of Lower limbs showed no evidence of thrombosis. The patient was stable and discharged after 10 days of hospitalization.

Discussion

Chickenpox is an extremely common illness, with about 90% of the population seropositive by the age of 15 [2]. It is uncommon, but more severe in adults with an increasing number of deaths being reported hospitals [5,6]. Pneumonia

occurs only in about 6% of infected adults [7]. Our patient had associated pneumonia. Treatment options vary from lotions plus antipyretic treatment or immunoglobulin and acyclovir for serious manifestations. Acyclovir does not significantly reduce the complications associated with the varicella zoster virus (VZV) infection [8].

Thrombotic complication is a rare occurrence in VZV infection [8-11]. VZV is known to have tropism for vascular endothelium of cerebral arteries. VZV is one of the commonest cause of ischemic stroke in children, other complications being cerebral aneurysm and subarachnoid hemorrhage. Unlike children, however, VZV in adults shows preference for lower limb arteries. Our PubMed search for VZV and thrombotic complications, showed only 5 reported cases of peripheral thrombosis, all involving lower limb arteries. All the five cases were males, three out of four being smokers with no past history of peripheral vascular disease. Our patient was a nonsmoker with no previous history of peripheral vascular disease. The origin of thrombotic complications of VZV remains unknown. One study suggests that thrombosis was associated with free protein S deficiency with the presence of anti phospholipid antibodies [3,4]. The presence of lupus anticoagulant was also found in one of the case reports [3]. Another study suggested thrombosis was mediated by autoantibodies induced by VZV infection and directed against the proteins involved in the coagulation cascade [11].

Acute coronary syndrome (ACS) may also occur in patients with varicella zoster virus infection after the primary infection caused by varicella infection has been resolved [12]. Interestingly, our patient developed acute coronary thrombosis and lower limb arterial thrombosis during varicella zoster virus infection and not as a delayed complication. To the best of our knowledge, a person developing ACS and lower limb arterial thrombosis during VZV Pneumonia has not been reported before [8-12].

Conclusion

Chickenpox in adults, even in those who are previously healthy, is a life-threatening infectious disease and may be associated with acquired hypercoagulable state manifested by acute limb ischemia, stroke or ACS depending upon the vessel

involved. Clinicians should be well aware of these serious complications for early recognition and prompt therapeutic management. Above case is also important with respect to timing of complications. Thrombotic complications are usually delayed, but can occur in acute phase also.

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