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Case report

POST VARICELLA ANGIOPATHY- A CASE REPORT

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ABSTRACT

Chickenpox is a common viral illness in children. In most of the immunocompitent children it's a self-limiting disease and seldom causes complications. Neurological complications are one of the rare complications of chickenpox. These complications may present as hemiparesis, focal deficits and arterial ischemic strokes (AIS). These Ischemic strokes may be a manifestation of post varicella angiopathy. Here we present a case of 11 year old girl who presented with left hemiparesis with left sided facial nerve palsy 15 days after chickenpox. An MRI was done which was suggestive of multiple infarcts in cortical and subcortical regions and MR angiography was suggestive of narrowing of right middle cerebral artery. Patient was treated with aspirin and LMW heparin in addition to supportive measures.

Keywords: Post varicella angiopathy, arterial Ischemic stroke, Hemiparesis.

INTRODUCTION

Varicella in childhood is usually a self-limiting disease. Although mortality and morbidity may be more in immunocompromised individuals, in immunocompitent individuals it usually doesn't lead to any complications [1]. The complications which may be seen in varicella infections are secondary bacterial infections, bacterial pneumonias, thrombocytopenia, glomerulonephritis, myocarditis, arthritis, orchitis and hepatitis [2]. Neurological complications may include cerebellar ataxia, encephalitis and stroke [3]. Post Varicella angiopathy as a cause of arterial ischemic stroke is an unusual occurance. Here we present a case post varicella angiopathy in 11 year old girl who presented with left hemiparesis and left sided facial nerve palsy 15 days after chicken pox.

CASE REPORT

11 year old girl 5th by order of birth presented with complaints of weakness of left upper and lower limbs with deviation of angle of mouth towards right side, difficulty in eating and drooling of saliva since 5 days. There was no history of convulsions, fever or head trauma. There was a history of chicken pox 15 days back for which she was treated by a local pediatrician on OPD basis. On admission the patient was vitally stable with post inflammatory hyperpigmented spots all over the body. On neurological examination positive findings were left upper motor neuron type of facial nerve palsy in the form of deviation of angle of mouth to right side. Power in left upper and lower limbs was 3/5 with increased tone in left upper and lower limbs. Deep tendon reflexes were exaggerated on left side along with upgoing plantar on left side. Patient was admitted in view of left hemiparesis and left facial nerve palsy. Her routine investigations CBC, coagulation profile and Hb electrophoresis was normal. Screening for tuberculosis was also negative. 2D echo was done to rule out cardiac cause of stroke

but it was also normal. MRI Brain was done which was suggestive of multiple infarcts in right cortical and subcortical regions of right frontoparietal lobe involving right centrum semiovale right corona radiate, right internal capsule, right cerebral peduncle, right insular cortex, right temporal lobe, right lentiform nucleus. MR angiography was suggestive of narrowing of distal half of M1 segment of right middle cerebral artery with paucity of cortical branches.

Fig 1: Narrowing of Right Middle Cerebral Artery is seen on MR angiography

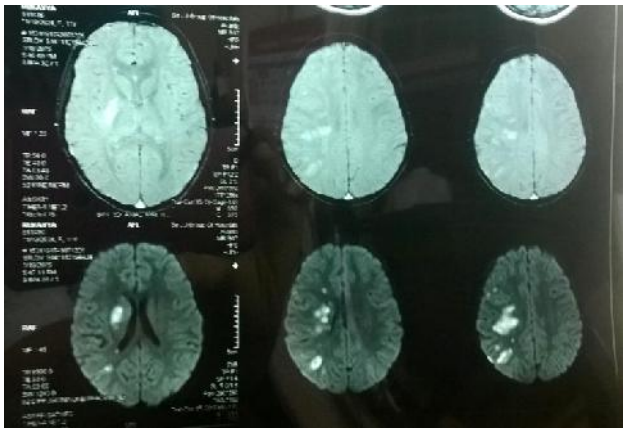

Fig 2: Right cortical and subcortical infarcts seen on MRI

In view of history of chicken pox 15 days prior to stroke and MRI findings patient was diagnosed to be having post varicella angiopathy. Patient was started on aspirin and LMW heparin in view of stroke. Oral feeding was continued. Patient started showing improvement and by 5-6 days was able to walk with little support. Patient was adviced regular physiotherapy and was discharged with an advice to follow up with repeat MR angiography after 3 months.

DISCUSSION

The etiology of stroke in pediatric age group is quite different from that of adults. Types of stroke in pediatric age group are arterial and venous thrombosis, intracranial bleeds, embolism and various other conditions. Predisposing conditions for stroke in children include cardiac diseases like congenital heart diseases, arrhythmias, structural valvular heart diseases, bacterial endocarditis causing mycotic aneurysms, sickle cell disease and occlusive vascular diseases like moya moya disease etc[4]. Varicella angiopathy is one of less common causes of stroke in childhood. The underlying mechanism of varicella causing AIS is not clearly understood. Various mechanisms have been suggested. One of the possible explanation is intraneuronal migration of VZ virus from trigeminal ganglion along the trigeminal nerve to cerebral arteries [5]. VZ virus was present in the media of the large cerebral arteries in adult patients presenting with herpes zoster opthalmicus [6]. The fact that the distribution of vasculitic lesions in varicella infection associated arterial ischaemic strokes corresponds to and matches the anatomical location and density of trigeminal nerve innervations at circle of willis further potentiates this theory. Recurrence of stroke is more common in the varicella associated AIS than nonvaricella AIS [7]. Radiological finding in AIS associated with varicella is more likely to have infarcts in basal ganglia, multiple infarcts and large vessel stenosis. In pediatric age group basal ganglia infarcts may be associated with the history of varicella ranging from 10-50% [8].

Primary prevention of post varicella AIS by varicella vaccine is important but given the rarity of complication of varicella infection in pediatric age group and excellent prognosis of AIS in pediatric patient means only modest impact is expected. Treatment of varicella associated AIS is mainly supportive. Antiviral therapy and anticoagulants can also be given.Varicella associated AIS has a higher mortality and morbidity in adults [9].As the survival rate is excellent in children as compared to adults, antiviral therapy and anti-inflammatory therapy may not be given in pediatric patients presenting with AIS associated with varicella infection[10]. Anticoagulant therapy in initial phase of stroke should be considered as this will prevent local extension of the thrombus

and chances of embolization. Long term therapy with aspirin should be prescribed to all children having suffered AIS due to varicella infection.

CONCLUSION

Strokes in children have distinct etiology. Post varicella angiopthy is an important cause of AIS and should be considered in differential diagnosis especially when radiological findings of basal ganglia infarcts, multiple infarcts and stenosis of large vessels are found. As post varicella angiopathy may cause AIS several months after initial infection it's important to carefully elicit past history of chicken pox in pediatric patients presenting with AIS.

Conflict of interest: Nil

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