Case Report

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An unusual presentation of encephalitis which mimicked generalised tetanus

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ABSTRACT

Movement disorders are frequent mimickers of more severe neurological presentations, whenever it is diagnosed one should suspect a central nervous system infection as an underlying cause. A 11 year old girl presented in casuality with intermittent generalised muscle spasm, clear sensorium, trismus and risus sardonicus. Initially managed as a case of tetanus, rapid resolution of spasms made suspicion of encephalitis as underlying cause of dystonia which mimicked tetanus. Blood investigation and CSF analysis were normal. CECT brain showed hyper dense lesions bilateral temporal lobes suggestive of viral encephalitis. Child was managed with intravenous acyclovir and dexamethasone after which child improved considerably. Acute dystonia is a close mimicker of tetanus. Any patient presenting with new onset movement disorder should be investigated for central nervous system infection even though it has been reported as a rare cause for the same.

Keywords: Tetanus, Acute dystonia, Encephalitis

INTRODUCTION

Fully developed generalised tetanus cannot be mistaken for any other disease. However trismus, risus sardonicus and tonic muscle spasms can occur in some other conditions like encephalitis, strychnine poisoning, acute dystonia, hypocalcemia, occasionally epileptic seizures, narcotic withdrawal or other drug reactions may suggest tetanus. Encephalitis has been reported to be a rare cause of severe dystonia. Markedly severe dystonias are characterized by increasingly frequent episodes of generalized dystonia with bulbar, respiratory or metabolic derangement or leading to exhaustion or pain.

We reported a rare presentation of viral encephalitis in a 11-year-old girl who presented with markedly severe dystonia which mimicked tetanus.

CASE REPORT

A 11 year old girl presented in paediatric casuality of Jhalawar medical college at 10 pm with history of intermittent tightening of whole body with abnormal posturing and peculiar facial expression since 4 pm on the same day. Child was said to have low grade fever for past 3 days. There was no history of any drug intake. No history of similar illness in family.

On examination, child was conscious and oriented. She looked exhausted, was afebrile and was hemodynamically stable. There was no focal neurological deficit. Neck rigidity was present. While in PICU, child developed generalised muscle spasm causing her to rise from supine position against resistance. Child also had abnormal posturing of limbs, hand and jaw during the spasms. There was characteristic spasm of facial muscles causing the classical risus sardonicus of Tetanus. There

was trismus and child had residual residual rigidity of neck, limb and abdominal muscles in between spasms. Each spasm lasted for 2-5 minutes.

Management and outcome

Differential diagnosis thought were tetanus, acute dystonia and tetany. ECG was done to calculate QTc interval which was 0.41 sec (normal). In view of seriousness of diagnosis, absence of drug history for dystonia benefit of doubt was given to tetanus. A working diagnosis of tetanus was made due to intermittent generalised muscle spasm with residual rigidity of muscles, trismus and risus sardonicus along with a clear sensorium. Child was given tetanus immunoglobulin, tetanus toxoid, IV metronidazole and IV infusion of diazepam. Spasms came under control by 2 am with 7.5 mg/kg/day of diazepam. By next day there was no significant spasms, but there was minimal rigidity of neck, limb and abdominal muscles left.

In view of trismus and early control of spasms, CNS infection was considered as a possibility and was investigated. Complete blood count, slide test for malarial parasite, renal function, serum electrolytes were found to be normal. Lumbar puncture was done, CSF analysis and culture was found to be normal. Contrast enhanced CT scan of brain showed hyperdense areas in bilateral temporal lobes which was suggestive of viral encephalitis. Provisional diagnosis of herpes viral encephalitis was made and child was started on IV aciclovir and dexamethasone, IV diazepam was tapered and stopped. There was significant improvement in rigidity of neck and limb muscles. Due to financial constraints and limited investigation facilities, CSF PCR for herpes virus was not done. But according to supportive CT findings and clinical improvement diagnosis of acute dystonic reaction due to herpes viral encephalitis was made.

DISCUSSION

Movement disorders are characterised by abnormal or excessive involuntary movements that result in abnormal or excessive involuntary movements that result in abnormalities in tone, posture or fine motor control. These involuntary movements can represent the sole disease manifestation or they may be one of many signs and symptoms.¹

Dystonia is intermittent and sustained involuntary muscle contraction that produce abnormal posture and movement. It can occur due to static injury/structural disease of central nervous system: encephalitis, tumours, basal ganglia stroke, head trauma; metabolic disease: DOPA responsive dystonia, Wilsons disease; heriditary/neurodegenerative disorder: Retts syndrome, Niemann Pick disease; drugs/toxins: neuroleptics, antiemetics.

Some of the well-defined presentations of acute dystonic reaction makes it a close differential diagnosis of Tetanus.²

Buccolingual crisis (trismus, risus sardonicus, grimacing), torticollic crisis (abnormal head or neck position), torticopelvic crisis (abnormal contraction of abdominal wall and hip musculature), opisthotonic crisis.

Encephalitis has been reported to be a rare cause of severe dystonia. In a case series reported by Kalita and Mishra, 5 patients among a subgroup of 50 patients with Japanese encephalitis had markedly severe dystonia. All the patients were males and their ages ranged from 6 to 19 years. Movement disorders appeared 1 to 3 weeks after the illness as level of consciousness started improving. During the next 1 to 4 weeks, patients began to experience markedly severe dystonia. It was associated with marked axial dystonia resulting in opisthotonous and retrocollis in five patients, jaw opening dystonia in two patients, teeth clenching in one patient and oculogyric crisis and neck deviation in another patient. The attacks of markedly severe dystonia lasted for 2 to 30 minutes and occurred as many as 20 to 30 times daily.³

Movement disorders in viral encephalitides are seen particularly in children. Infection related movement disorder can occur either due to direct effect of pathogen or delayed immune mediated process secondary to primary infection.⁴ Dystonia is the most common movement disorder associated with CNS infection. It is more commonly reported with flavivirus infection like West Nile virus and Japanese encephalitis. Herpes encephalitis is relatively uncommon to cause movement disorder and if present more commonly is of choreiform type.⁵ Herpes simplex tends to affect infants more often than older children and although chorea can be present early in the course of encephalitis, it more often signals a relapse after treatment or delayed immune response. Varicella is associated with transient bilateral facial, jaw, arm chorea, dystonia and less often with hemichorea or generalised chorea. Most patients also have seizures and anticonvulsant medication may contribute to the Rare development of dyskinesias.6 cases oromandibular dystonia due to HSV encephalitis is reported till now.7 Oromandibular dystonia is a rare complication of Japanese encephalitis and treatment is unsatisfactory in severe cases. In a case report by Maurya et al they reported a child with JE who developed markedly severe oromandibular dystonia in subacute phase of the illness.8 Oral antidystonic medications were used without much avail. In view of disabling oromandibular dystonia he was treated with Botulinum toxin without adverse effects and had improved quality of life. Movement disorders are extremely common and diverse in autoimmune encephalitis and paraneoplastic neurological syndromes (PNS). Early diagnosis of autoimmune encephalitis is essential, as the associated abnormal movements can be effectively treated with immunomodulators.9

High index of suspicion is the key to diagnosis of CNS infection in any case of subacute or acute movement disorder. Indeed it is rare to encounter a case of herpes viral encephalitis to cause severe dystonic reaction which mimick classic features of tetanus.

CONCLUSION

Movement disorders are frequent mimickers of serious neurological presentations like seizures, tetanus, tetany. CNS infection should be strongly suspected in any case of acute onset movement disorder. Inspite of newer investigation modalities, process of diagnostic modification and refinement is still the key to reach a final accurate diagnosis.

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