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Case Report

Internal Medicine Section

Dancing Eyes Dancing Feet Syndrome-A Report of Two Cases

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ABSTRACT

Opsoclonus Myoclonus (OMS) is a rare neurological disorder which appears to be the result of an autoimmune dysfunction. It is an extremely rare condition, affecting as few as 1 in 10,000,000 people every year. It affects 2 to 3% of children. Opsoclonus Myoclonus, which manifests itself as post infectious encephalopathy, occasionally along with HIV infection, post Streptococcal infection, West Nile virus encephalitis and Rickettsial infection, most often presents as a paraneoplastic syndrome, which is especially caused by occult neuroblastoma which is commonly seen in childhood and occurs in adults in relation to breast cancer and small cell lung cancer. In this study, two adult post infectious cases which had rare manifestations, have been presented. The cases were managed by using corticosteroids.

Keywords: Opsoclonus myoclonus, Paraneoplastic syndrome, Autoimmune disorder, Post infectious encephalopathy

CASE REPORT 1

A 38-year-old female who had fever for 10 days, followed by an altered sensorium, with irrelevant talk and violent behaviour, got admitted in a private psychiatric hospital and was later referred here with the following features: unsteady gait, cerebellar ataxia, both axial and appendicular, intention tremor, myoclonus, opsoclonus, dysarthria, hypotonia, lethargy and irritability [Table/Fig-1]. Apart from the routine investigations, this patient was screened for occult malignancies. Serology was negative. CSF analysis showed a normal picture. MRI of brain and spine showed normal results. This patient had altered behaviour, opsoclonus, myoclonus and ataxia following a febrile episode and hence, a diagnosis of kinsbourne encephalitis was made. She was treated with parenteral methylprednisolone, followed by oral prednisone, along with other supportive measures. She responded well and was ambulant within a period of 1 month, with myoclonus subsiding initially and opsoclonus evolving into an ocular flutter, then into oculardysmetria, except for minimal ataxia. The patient recovered completely from ataxia after a period of six months.

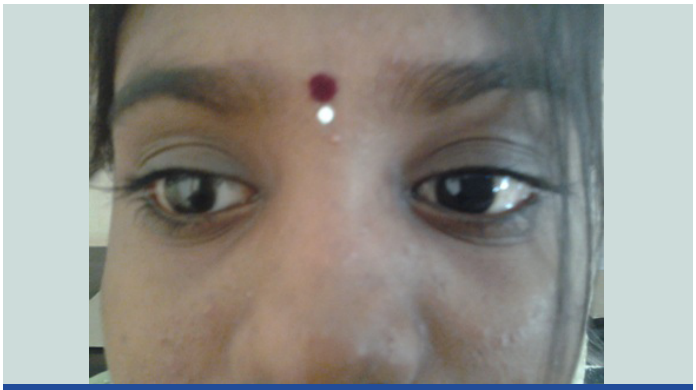
CASE REPORT 2

A 28-year-old male who had a h/o headache for 3 days, was admitted with acute onset of loss of consciousness which lasted for about 6 hrs and later, the patient was found to have cerebellar ataxia, both axial and appendicular, intention tremor, myoclonus, opsoclonus, dysarthria and hypotonia [Table/Fig-2]. Apart from the routine investigations, this patient was screened for occult malignancies. Serology was negative. CSF analysis showed a normal picture. MRI of brain and spine showed a normal picture. Based on the above clinical features, a diagnosis of opsoclonus myoclonus was made and patient was treated with parenteral methylprednisolone, followed by oral prednisone, along with other supportive measures. He responded well, was ambulant within a period of 1 week and recovered fully, without any neurological deficit. A possibility of a post infectious aetiology was considered, in view of the preceding fever and the negative work up for malignancy, which were seen. This patient recovered after a period of three months. Comparison of clinical findings of two cases was depicted in [Table/Fig-3].

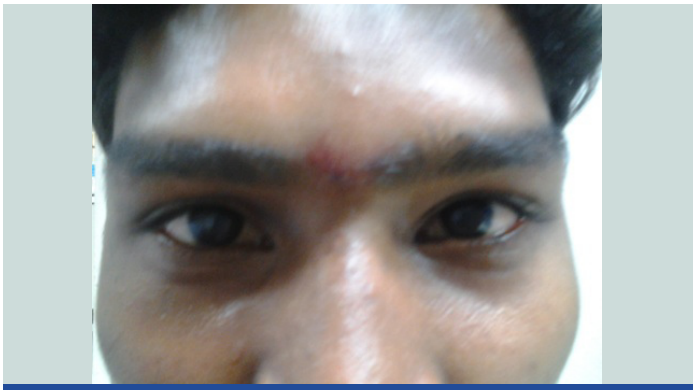
DISCUSSION

OMS was first described by Marcel Kinsbourne in 1962 [1]. (The term, 'Opsoclonus' was coined by Orzechowski in 1913, but it was classically described and associated with neuroblastoma by Kinsbourne. Other names for OMS include Opsoclonus-Myoclonus-Ataxia (OMA), Paraneoplastic Opsoclonus-Myoclonus Ataxia (POMA), Kinsbourne syndrome, Myoclonic Encephalopathy of Infants, Dancing Eyes-Dancing Feet syndrome and Dancing Eyes syndrome.

Opsoclonus myoclonus occurs in adults in relation to malignancies of breast and lung (small cell carcinoma), in association with antibodies which are directed against an RNA binding antigen from the anti Hu antibody, which is -termed as anti Ri-anti neuronal antibody type [2].This antibody is not found in the opsoclonus –ataxia syndrome of neuroblastoma. In children, this syndrome is common and it is



[Table/Fig-1]: Female patient with dancing eyes



[Table/Fig-2]: Male patient with chaotic eyeball movement

S. No	Age/Sex	Complaints	Findings	Treatment/Outcome
1	35/F	LOC, Involuntary eye movements jerky involuntary movements of the limbs	Altered Sensorium, opsoclonus, myoclonus, ataxia, intention tremor	IV Methyl prednisolone, oral steroids Ataxia & in coordination persists
2	28/M	Head ache, lethargy irritability, involuntary eye movements, unsteadiness	Altered sensorium, opsoclonus, polymyoclonus	IV Methyl prednisolone, oral steroids-recovered completely

[Table/Fig-3]: Comparison of clinical findings of two cases

usually caused by manifestation of neuroblastoma. The unique features of neuroblastoma is the response of this syndrome to corticosteroids and ACTH in most of the children and some adults and the resolution of the neurological signs when the neuroblastoma is removed. More complex syndromes have been reported to be associated with the anti–Ri antibody, which manifest with rigidity and intense stimulus sensitive myoclonus, in addition to core features of opsoclonus and ataxia.

A clinically benign syndrome of opsoclonus myoclonus presumably of a post viral, infectious nature, has been well described. This disorder occurs after prodromal illnesses, which include, gastrointestinal tract symptoms (56%), upper respiratory tract symptoms (18%) and fever (26%). Most of the patients recover within a few months.

Digre reviewed 58 cases of opsoclonus in adults. It has been reported most frequently as a sequelae to presumed viral infections. There were 34 patients with a constellation which was known as myoclonic encephalopathy. This infection was documented only in 8 cases. These cases included psittacosis, rickettsia, Coxsackie virus B3 and B2. Twenty eight (82%) of 34 cases resolved without sequelae in about eight weeks. In the group which was suspected of having an infectious origin, only six out of 38 patients had a definite diagnosis of coxsackie B3 infection. Pauranik et al., described six cases of acute onset opsoclonus myoclonus following febrile episodes [3].

Four out of six patients showed evidence of rubella infection. Bhatt et al., described an acute syndrome with ocular oscillations and truncal myoclonus, which had followed a recent infection which had occurred in a 25 years old male. Post infectious opsoclonus with palatal myoclonus has been reported in a one and a half year old baby girl by Sridharan et al. People who have the greatest chances of returning to normal after treatment are those who have the mildest symptoms. Those with more severe symptoms may get relief from myoclonus, but they may face a difficulty in coordination of functions. Currently, no clinically established laboratory investigations are available to predict prognosis or therapeutic response. Anatomical localization of opsoclonus myoclonus is not clear.

Autopsy data has suggested loss of Purkinje cells, or a dentate demyelination. Brainstem and cerebellum together, have also been implicated. Three different premotor neurons, burst, tonic and pause cells, which are located in pontine reticular formation, ultimately control the eye movements. Tonic cells hold the eye in new position. Burst cells initiate involvement of saccades and pause cells inhibit burst cells. Disease of burst cells produces abnormal saccades. Disease of pause cells produces an abnormal oscillation like flutter or opsoclonus. A lesion in dentatorubral pathway may be responsible for occurrence of opsoclonus and myoclonus of limbs and palate'. Takamichi et al., demonstrated positive lesions in patients with the opsoclonus myoclonus syndrome on MRI.

Treatment which was given for opsoclonus myoclonus which had occurred due to any cause, has not been uniformly successful. Many authors recommend ACTH or steroid therapy. Many others suggest no treatment in cases which are associated with presumed viral illnesses, since symptoms abate in 6-8 weeks without therapy. There are reports which have said that baclofen, clonazepam, propanolol, thiamine, thyrotrophic releasing hormone, 5HT, and chloramphenicol and valproic acid reduced the eye movements.

Tumours which occur in children who develop OMA tend to be more mature, showing a favourable histology and absence of n-myc oncogene amplification than similar tumours which occur in children without symptoms of OMA [4]. Involvement of local lymph nodes is common, but these children rarely have distant metastases and their prognosis, in terms of direct morbidity and mortality, which result from the tumour, is excellent [5]. The three-year survival rate for children with non-metastatic neuroblastoma and OMA was 100% according to Children's Cancer Group data (gathered from 675 patients who were diagnosed between 1980 to 1994); three-year survival in comparable patients with OMA was 77% [6]. Although the symptoms of OMA are typically steroid-responsive and recovery from acute symptoms of OMA can be quite good, children often suffer lifelong neurologic sequelae that impair motor, cognitive, language, and behavioural developments [7,8].

Most children will experience a relapsing form of OMA, though a minority will have a monophasic course and they may be more likely to recover without residual deficits [9]. Viral infections may play a role in the reactivation of disease in some patients who had previously experienced remissions, possibly by expanding the memory B cell population [10]. Studies have generally asserted that 70-80% of children with OMA will have long-term neurologic, cognitive, behavioural, developmental, and academic impairments. Since neurologic and developmental difficulties have not been reported as a consequence of neuroblastoma or its treatment, it is thought that these are exclusively caused by the immune mechanisms which underlie OMA [11].

One study came to the conclusion that: Patients with OMA and neuroblastoma have excellent survivals but a high risk for neurologic sequelae. A favourable disease stage correlates with a higher risk for development of neurologic sequelae. The role of anti-neuronal antibodies in late sequelae of OMS needs further clarification. Another study stated that: residual behavioural, language, and cognitive problems occurred in a majority of patients [12]. There is no known definitive cure for OMS. However, several drugs have been proven to be effective in its treatment.

Some medications which are used to treat the symptoms are: ACTH has shown improvements in symptoms but it can result in an incomplete recovery with residual deficits. Corticosteroids (such as prednisone or methylprednisolone) which are used at high dosages (500 mg - 2 g per day intravenously for a course of 3 to 5 days) can accelerate regression of symptoms. Subsequent, gradual tapering with pills generally follows. Most of the patients require high doses for months to years, before the doses can be tapered. Intravenous Immunoglobulins (IVIg) are often used, with varying results. Several other immunosuppressive drugs such as cyclophosphamide and azathioprine, may be helpful in some cases. Chemotherapy may be effective for neuroblastoma, although data is contradictory and unconvincing at this point of time. Rituximab has been used, with encouraging results [13]. Other medications are used to treat symptoms without influencing the nature of the disease (symptomatic treatment): Trazodone can be useful against irritability and sleep problems Additional treatment options include plasmapheresis which is given for severe, steroid-unresponsive relapses.

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