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INTRACTABLE CHILDHOOD SEIZURE:A CASE REPORT

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ABSTRACT

Seizure is the most common pediatric neurologic disorder. Age specific prevalence rates are highest in 1st decade of life especially below the age of 2 years. Febrile seizure, head injury, perinatal brain damage and positive family history are the possible risk factors. Risk factors of intractable epilepsy in Indian studies include early age onset, neurodevelopmental abnormalities and certain seizure type. Many intractable epilepsies are not truly intractable and respond to simple therapeutic measures.According to Ayurveda we can consider this condition under *akshepa* and recurrence of it under *apasmara*.A case of intractable childhood seizure has been successfully treated with ayurvedicmedicines.The result strengthens the role of ayurvedic medicine in the management of neurological disorders like childhood seizure.

Keywords: seizure,intractable epilepsy.*Akshep*,*apasmara*

INTRODUCTION

Seizure is defined as sudden and simultaneous discharge of brain neurons which leads to alteration of consciousness, motor activity, behaviour, sensation and autonomic function.Epilepsy is defined as two or, more clinical unprovoked seizures (*i.e.*, afebrile, unrelated to acute metabolic derangements or, drug induced)[1,2]. Epilepsy was considered active if the individual had at least one seizure in the last five year period, regardless of antiepileptic drug (AED) treatment[1, 2].

Age specific prevalence rates are highest in 1st decade of life especially below the age of two years[3]. Approximately 85% of the global burden of epilepsy resides in the developing world, where most people with epilepsy receive no medical attention at all[4].The states with a high burden of mental problems (more than50 lakh cases) are: UP, Maharashtra, Biharand West Bengal[5]. Indian Council of Medical Research (ICMR) covering a population of 102,557, a prevalence rate of 8.8 per 1,000 populations was observed, with the rate in rural communities being twice that of urban areas [6].Intractable or refractory means 'difficult to control' epilepsies constitute about 10-20% of childhood epilepsies[7]. Risk factors of intractable epilepsy in Indian studies include early age onset (up to 2-3 years), neurodevelopmental abnormalities and certain seizure type.

In infancy and early childhood, epileptic encephalopathies like West syndrome,Lennox Gastaut syndrome etc. in which the epilepsy itself is responsible for

cognitive deterioration tend to be refractory to treatment[8, 9].

Perinatal (7th month of gestational age to 7 days after birth) insults like neonatal hypoglycaemia, neuronal migration disorder etc. predominates this type of seizure. The etiology of epilepsy upto 3 year of age- 50% children have perinatal brain damage in their MRI report out of which 23% have hypoglycemic brain injury[10].

In hypoglycemic brain injury low birth weight(L.B.W.) was the risk factor but cesarean section (L.S.C.S.) and poor feeding is another important risk factor even in appropriate for gestational age(AGA) baby.Infantile spasm and focal seizure were the most common seizure type of refractory seizure[11].

Modern medication result in control of seizures in majority of cases but 10-20% have persistent seizures refractory to drugs ,and those cases pose a diagnostic and management challenge [12] . This type of epilepsy is not response to first anti-epileptic drugs. Some therapies such as adrenocorticotropic hormone (ACTH) for West syndrome require short term injections and monitoring of blood pressure, urine sugar etc. adversely affecting their acceptance.

Childhood seizure is one of the most important causes of attending medical centres especially emergency departments, and can be a cause of morbidity and disability in childhood [13].Cognitive function, quality of life, educational problems, psychiatric morbidity and side effects of anti-epileptic drugs in addition to children and parents' concerns about social stigma of epilepsy are some of the factors that make childhood seizure a crucial subject in pediatrics[14].

According to ayurvedic view all briha-trayee,laghutrayee,vangasena, chakradutta etc. describe *apasmara* (epilepsy) and *ak-shepak*(seizure) by sushruta and charaka.[15,16,17,18,19,20,21]In balgraha*skanda-pasmara*is described which can be correlated with seizure disorder in children.

The management of seizure disorder described in ayurvedic texts are*shodhana*like*tikshnavamana ,nasya,virechana* etc. initially to clear the *srotas*(channels) followed by medicated *ghrita* and *kalpas* orally.

CASE REPORT

A 5 years oldhindu female child came to outpatient in balrog department of ayurvedic hospital nigdi,pune .She was the known case of seizure disorder, with her first episode at the age of 3 months start as infantile spasm with abnormal EEG. After that the seizure was manifested as generalized tonic clonic (GTC) .Her history of developmental milestones achievement showed global developmental delay(speech and motor milestones) and generalized hypotonia was also there.In her medication history, she had been received allopathic anti-convulsant medication(syrup epilepsal 5ml two times,tablet frisium5mg once in a day then change to valparin syrup) started from 3 months of age and stopped abruptly by her parents at the age of 3 year without any consultation because in this duration of medication,she still has seizure episodes daily.After that she was on homeopathic treatment upto 5 year of age by which frequency of seizure decreases by daily episodes to 1-2 /week and then constant. Her EEG finding was abnormal shows generalized epileptiform activity. In her parents there is no family history of this disorder. Then the patient came to my OPD and

shewas advised to do MRI brain and prescribed an ayurvedic regimen for 15 days. Surprisingly, there was no seizure episode upto her first follow–up. Her MRI finding was corpus callosum hypogenesis(reduced volume) with delayed myelination in anterior limb of internal capsule.The ayurvedic therapy has been continued upto 10 months with some modifications in the recipe and the patient was followed up monthly and in this duration the patient was seizure free without any anticonvulsant drug and speech improvement was also there. Now the patient is seizure free till datewithout any type of medication.

Medication-

On the first visit (12/11/2011) patient had been prescribed -Smritisagarras 60mg,rajat bhasma 15mg,bramhi (*Bacopamonnieri*),vacha(*Acoruscalamus*), sunthi(*Zingiberofficinale*)*churna*(powder) each 60mg *apanakala* (before meal) two times in a day with Mahakalyanak ghee, and also advised *pratimarshanasya* with Mahakalyanak ghee started with 2 drops and increased weekly by 2dropsupto 6 drops in both nostrils 2 times morning and evening.

After 15 days her MRI report(on 30/11/11) was showing demyelinating disorder and hypogenesis of corpus callosum. Then the treatment plan was changed partially to stop Smritisagarras which is strong for longterm use in *balyavastha* due to tamra,hartala and manahshila and started(on01/12/11)manasmitra vatak-60mg(suvarnakalp)and in place of raupyabhasma started tapyadilauh(rajat)60mg with bramhi ,vacha andsunthichurna as advised above with kalyanak ghee and nasya as advised for 1 month.

The patient had been followed up monthly up to 10 months and she was seizure free in this duration along with improvement in her speech. Her Manasmitravatak was continued for 6 month and after that she was on tapyadilauh and vacha ,brahmi,sunthichurna same dose along with previous anupana and stop nasya by herself.

The patient till date is seizure free without any medicine.

DISCUSSION

The treatment of intractable seizure in childhood age is difficult and well controlled trial in this group of patients is uncommon. In presenting case, the cause behind the seizure in her MRI is the corpus callosum hypogenesis (reduced volume) with delayed myelination in anterior limb of internal capsule. Normally neural migration occurs at 2-5 months of gestational age and its failure defect is agenesis/hypogenesis of the corpus callosum (ACC) .Normally the myelination begins at 6 month of gestation and become mature by 3 years of age and its failure manifest asdysmyelinating diseases.[22,23]

First episode with in first 3 month of age indicates any underlying congenital anomaly along with other causes. Congenital malformations like agenesis of corpus callosum etc. are frequent causes of persistent seizure in childhood age, refractory to anti-epileptic drugs.[24]

Here the presenting drug regimen has*medhyadravya(*brain tonic)like bramhi, vachaand *rasayana*(rejuvenating)with*depana*(to digest)like sunthi[25] along with tapyadilauh act as*raktaprasadana* (normalize blood supply) inbrain and indicated for*sharirikdoshavikritijanyaapasmara*(epilepsy due to any type of anatomical defect)and pittavatajvikar .

Smritisagara ras[26] indicated for*balagraha*(acute infections) of small children .Manasmitravatak is a suvarnakalp which is indicated for *manasrog*(mental disorders) has medhya effect[27].Here some suvanakalp was necessary to repair and rejuvenate the brain cells.The patient has delayed motor milestones sitting at18 months without support ,walking at3 year without support etc.along with delayed speech even at the age of 5 years (meaningful sentence).So,she was prescribed *brimhananasya* indicated in*vatavyadhi*and*swarabhransh*(speech defect) with mahakalyanaka ghee.[28]

Here we can assume that the overall effect of ayurvedic medicines mimic or enhance myelination which must be the relieving factor of seizure episode and enhance the developmental milestones because corpus callosum agenesis(CCA) is not always manifest in all individuals .In many cases the patient have no any seizure and normal intellect in the presence of CCA.[29]

CONCLUSION

So from the above discussion it can be concluded that we can successfully control this type of chronic and intractable seizure disorder in pediatric age group due to any type of underlying cause with herbomineral combination without any side effect.

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