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MYOCLONIC EPILEPSY OF LATE ONSET IN TRISOMY 21

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SUMMARY - We report the case of a patient with trisomy 21 (T21) with late onset epilepsy. The electro-clinical features were of myoclonic jerks on awakening and generalised tonic clonic seizures, with generalised spike and wave on EEG, and a progressive dementia. As familial Alzheimer's dementia and progressive myoclonic epilepsy (Unverricht-Lundborg type) are both linked to the chromosome 21, this case may represent a distinct progressive myoclonic epilepsy related to T21.

KEY WORDS: myoclonic epilepsy, Down's syndrome, trisomy 21.

Epilepsia mioclônica de início tardio na trissomia 21

RESUMO - Pacientes com trissomia do cromossoma 21 (T21), com o passar dos anos, são propensos a desenvolver crises epilépticas parciais concomitantes ao aparecimento de degeneração cerebral do tipo Alzheimer. Pacientes com T21 e demência parecem ter risco maior de apresentarem crises epilépticas que outros pacientes com degeneração cerebral do tipo Alzheimer. O caso relatado é de um paciente com T21 com epilepsia de início tardio. A história clínica consiste de crises mioclônicas ao despertar, ocasionais crises generalizadas tônico-clônicas, demência e ponta onda generalisada no EEG. Demência do tipo Alzheimer familial é ligada ao cromossoma 21, bem como epilepsia mioclônica progressiva (tipo Unverricht-Lundborg). Isto sugere que este caso possa representar um tipo distinto de epilepsia mioclônica progressiva, ligado ao cromossoma 21.

PALAVRAS - CHAVE: epilepsia mioclônica, síndrome de Down, trissomia do cromossoma 21.

Patients with trisomy 21 (T21) have a higher prevalence of epilepsy than the general population[11,12,15]. Amongst T21 patients, the onset of epilepsy has a bimodal distribution, being more common in early childhood and after the third decade[12,15]. A dementia of the Alzheimer type is frequent in T21, specially after the fourth decade of life[9,16]. This has become more apparent as the life expectancy of T21 has increased over recent years[1]. Partial seizures are the commonest type of seizures described in late onset epilepsy in patients with T21[4,11,12,15]. However, Genton and Paglia[5,6] have recently reported three patients with T21 with late onset epilepsy, whose clinical features included myoclonic jerks on awakening and tonic clonic seizures. We report here a similar case.

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CASE REPORT

A fifty one year old man with a phenotypic diagnosis of T21 was referred from his residential institution to our centre for assessment of his seizures. His first seizure occurred at the age of 50, and this was described by a witness as a generalised tonic clonic seizure. At least four further generalised tonic clonic seizures occurred in the next 12 months. He then developed myoclonic jerks, at a frequency of 4 per week, either on waking up, or within half and hour of waking. Treatment with carbamazepine 300 mg per day had been started by the referring physician. The EEG (Fig 1) showed widespread background anterior predominant slow activity with occasional intermittent generalised anterior predominant epileptiform discharges, photic stimulation and hyperventilation were not performed because the patient could not cooperate. Treatment with sodium valproate was instituted, with the concomitant tappering of carbamazepine, and this lead to an important improvement in the frequency of his seizures. The patient, however, died 6 months later. No autopsy was performed.

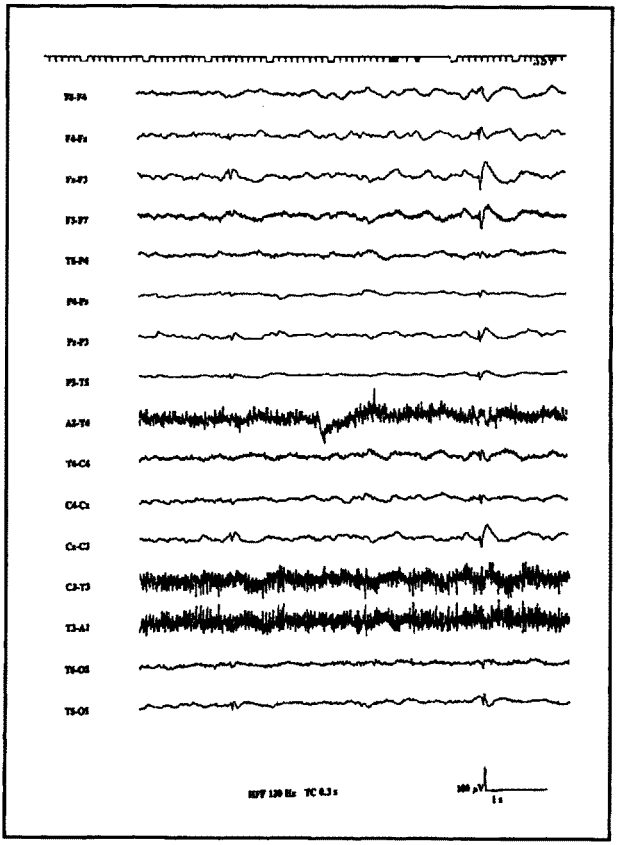

Fig 1. Patient was awake and uncooperative. EEG showed no alpha rhythm, the background activity was dominated by widespread anterior predominant delta activity. Occasional intermittent generalised low amplitude spike and waves were seen singly with anterior and left sided predominance.

COMMENT

T21 is a common cause of congenital cognitive impairment. Its incidence is approximately 1 in 700 registered births[11]. The prevalence of epilepsy in T21 is overall around 5 to 6%, increasing up to 20% after the third decade[15]. The prevalence of epilepsy in patients with T21 and dementia[4] has been found to be eightfold higher than other patients with dementia of Alzheimer type[8].

The onset of epilepsy in T21 may precede clinical dementia[11]. However, the diagnosis of dementia in patients with T21 may not be easy, as it may manifest in the early stages only as minor behavioural disturbance[4].

The seizure types in patients with late onset epilepsy in T21 have been mostly reported as partial seizures[4,11,12,14,15]. The EEG findings show in most cases of T21 with epilepsy of late onset diffuse background slow, with focal or multifocal epileptiform discharges[2,3,13,14]. The clinical features of the present case report and the three patients from Genton and Paglia[5,6], are characterised by epilepsy after the fourth decade, myoclonic jerks on awakening, occasional generalised tonic clonic seizures, and generalised epileptiform discharges on EEG, associated with a progressive dementia.

Disorders of chromosome 21 have been implicated in some types of familial Alzheimer's dementia[7], and also in progressive myoclonic epilepsy (Unverricht-Lundborg type)[10]. We speculate whether these findings might represent a distinct epileptic syndrome linked to T21.

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