CASE REPORT

Two cases of Creutzfeldt-Jakob Disease from an ongoing dementia registry in Pakistan

Arsalan Ahmad, Faiza Rao, Sahrish Aieshah

Abstract

Creutzfeldt-Jakob disease (CJD) is a rare prion disease that leads to a rapidly progressive dementia (RPD) and associated neurological features. It is not well documented in our country; therefore its true prevalence in Pakistan is not known. Here we report two cases of sporadic probable CJD seen in our hospital. The first, a 62 years old female, presented with RPD and myoclonus. The second was a 72 years old female who presented with generalized axial and limb rigidity, mutisim, personality changes and hallucinations along with RPD. Both cases were diagnosed as CJD on the basis of clinical, MRI and EEG findings.

Keywords: CJD, Pakistan, Rapidly progressive dementia (RPD).

Introduction

Creutzfeldt-Jakob Disease (CJD) is a prion disease resulting in progressive brain damage that leads to a rapidly progressive dementia and associated neurological features. It is an invariably fatal and transmissible encephalopathy.[1] It is a rare disease with a prevalence of 1 in million cases.[1-3] CJD is not well documented in our country; therefore its true prevalence in Pakistan cannot be assessed. Following the establishment of a national registry in India in 1988-89, 78 cases of CJD were detected which proves that CJD exists in the subcontinent.[4] We established a Dementia Registry at our hospital in October 2010 to identify the different types of dementia presenting to our department. At the time of the submission of the manuscript, 240 patients had been enrolled, out of which two had CJD.

Two cases of CJD are presented who were seen at the Shifa International Hospital, Islamabad, Pakistan.

Case Report

Case-1

A 62 years old female, with no known co-morbids or significant past medical history, presented in August 2012, with complains of forgetfulness, depression, disturbed sleep along with ataxia and vertigo for one and a half months. Two months later, she presented with progressive deterioration of mentation along with a two week history of drooling of saliva, jerks of all four limbs and progressive deterioration of speech. On examination she was an elderly lady sitting in a wheel chair, alert, responsive to pain, with drooling of saliva. She had slurred speech limited to only a few words. She had frequent myoclonic jerks every 1-3 seconds. She did not follow the torch; her pupils were 3-4mm and active. The deep

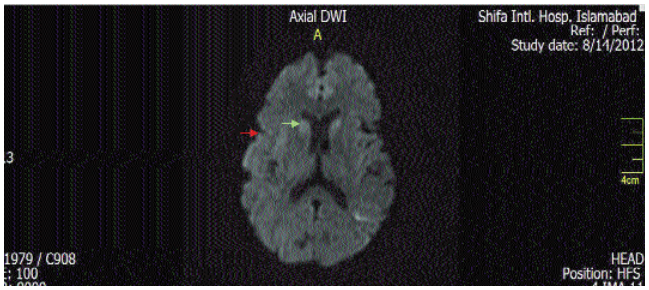

Figure-1: Subtle increased signal in bilateral caudate nucleus (green arrow) and subcortical ribboning (red arrow) on DWI.

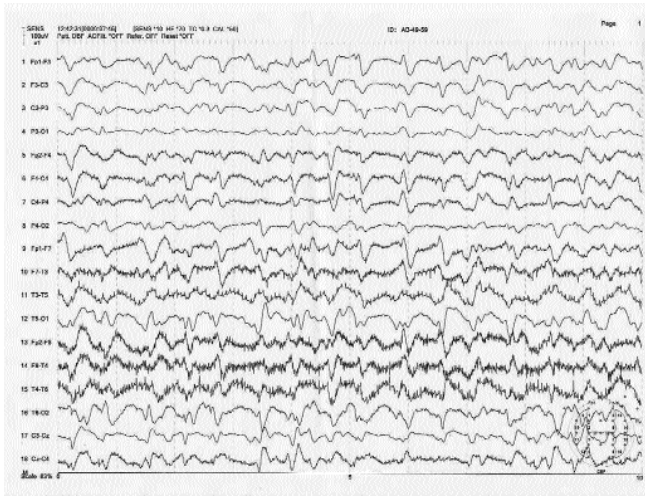

Figure-2: Symmetrical alpha and theta activity with frequent periodic discharges (slow waves, sharp waves, triphasics) occurring every 1-3 seconds.

Division of Neurology, Shifa International Hospital, Islamabad, Pakistan.
Correspondence: Arsalan Ahmad. Email: arsalanahmad65@gmail.com

tendon reflexes were brisk and plantar responses were flexor bilaterally. Her complete blood count (CBC), electrolytes, renal function tests, thyroid function tests and vitamin B12 levels were within normal limits. MRI brain showed subtle increased signal in bilateral caudate nucleus and subcortical ribboning on DWI (Figure-1), suggestive of CJD. EEG showed a background of symmetrical alpha and theta activity with frequent periodic discharges (slow waves, sharp waves, triphasics) occurring every 1-3 seconds (Figure-2), suggestive of CJD.

She appeared to have sporadic probable CJD on the basis of a combination of RPD with myoclonus, positive EEG and MRI findings. She was prescribed sodium valproate control release (CR) 500mg for the myoclonus and her caregivers were counseled regarding the disease.

Case-2

This 72 years old female presented to the Emergency Department in February 2013 with one week history of generalized axial and limb rigidity and mutism. The family also reported personality changes, hallucinations and decreased appetite for one month. She experienced one brief episode of psychosis with aggression after which she was prescribed olanzapine and escitalopram by an outside psychiatrist. She developed insomnia, stiffness and dystonic posturing. She had no known co-morbids or significant past medical history. On examination she was an elderly female lying in bed with dystonic posturing of the neck, board like rigidity in limbs. Deep tendon reflexes could not be elicited. The plantars were flexor bilaterally. She was not following any commands, was mute and had a staring gaze. Her pupils were 4mm and reactive to light.

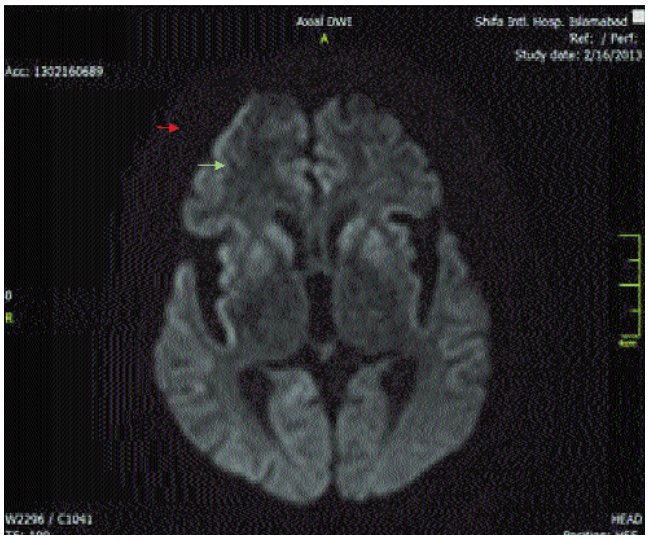

Figure-3: Subtle increased signal in bilateral caudate and lentiform nucleus (green arrow) and subcortical ribboning (red arrow) on DWI.

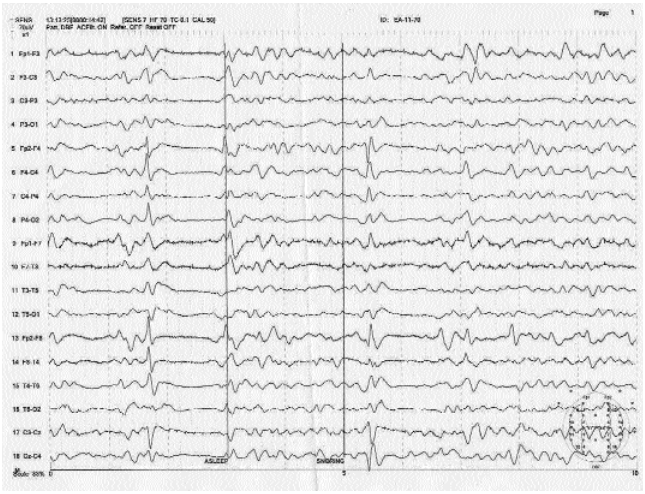

Figure-4: Symmetrical theta activity with frequent periodic discharges occurring bilaterally every 1-2 seconds.

Her CBC, electrolytes, renal function tests, liver function tests, thyroid function tests and vitamin B12 levels were within normal levels. She had a positive urine culture with Enterococccus and low vitamin D levels. The patient refused workup for Syphilis and HIV, but her history was not suggestive of both. Brain MRI showed subtle diffusion restriction in bilateral caudate and lentiform nucleus on DWI (Figure-3), consistent with early CJD. It also showed abnormal foci in bilateral periventricular and subcortical white matter on FLAIR MRI images, suggestive of microangiopathy. EEG showed a background of symmetrical theta activity with frequent periodic discharges occurring bilaterally every 1-2 seconds (Figure-4), suggestive of CJD.

A diagnosis of sporadic probable CJD was made. She was treated for the urinary tract infection and vitamin D deficiency. For the extrapyramidal symptoms, she was prescribed procycladin 2.5 mg BID, syrup diphenhydramine, and amantadine 100 mg BID and was discharged on clonazepam 0.5mg BID and memantine 5mg OD and the family was counseled regarding the prognosis of the disease.

Discussion

There are numerous etiologies of RPD, which can be categorized for diagnostic purposes into: vascular, infectious, toxic-metabolic, autoimmune, metastatic, iatrogenic, neurodegenerative and systemic.[5]

Both of our patients had sporadic CJD, which accounts for 85% of the total CJD cases but no clear risk factors have yet been identified.[3] Familial CJD (15-20%) was excluded due to absence of family history of probable case of CJD

in first degree relatives.

Variant CJD (<1%) which has been linked to bovine spongiform encephalopathy, (BSE)[3] was also excluded due to the older age group of the patients and shorter duration of disease (<1 year)[6] and no history of ingestion of contaminated foods of bovine origin or travel to areas of contamination.

Both our patients had no history of human pituitary hormone therapy, human dura mater grafts, corneal grafts or neurological instrumentation.[2,3]

Both of our patients underwent investigations suggested in the guidelines[5,7] to rule out other causes of cognitive impairment and fulfilled the WHO,[3] European MRI-CJD consortium[7] and UCSF[8] criteria for diagnosis of sporadic probable CJD.

CSF 14-3-3 protein assay is not available in Pakistan, hence was not done.

Only two other cases of CJD have been reported from Pakistan in a pub med indexed local journal.[7,8]

It makes one wonder that there might be more undiagnosed cases in our country therefore neurologists should keep a high index of suspicion for CJD especially in RPDs and get DWI weighted MRI imaging in addition to EEG.

References

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