An unusual case of involuntary movements and seizures

- A 15 year old male patient presented to OPD with complaints of :

1. Generalized tonic clonic seizures (3 episodes) 20 days back
2. Irrelevant talks since 20 days
3. Involuntary movements since 4 days

- Patient was apparently alright about a month back .
- Patient had1-2 episodes of fever, mild grade and relieved on taking medication and not associated with headache and vomiting and recovered completely.
- About a1 week after patient developed 3episodes of GTCS .
- Following admission in our hospital , patient had repeated involuntary movements/actions like a video game character and he imagined himself to be the character of the video game and these movements he continued for 2 days and then he used to do self muttering and had visual hallucinations .

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Past history :

- No similar complaints in the past.
- No History of DM / TB / Bronchial Asthma / HTN / Seizure Disorder.
- Sleep- Disturbed .
- He was an average student in school before the symtoms appeared.
- No other significant personal and family history

On examination :

Afebrile
Pulse- 86/min
BP- 120/80mmof hg
RR-18/min
Spo2- 99%on RA

Systemic examination :

- **CNS**:
  - Conscious.
  - orientation to place and time disturbed along with past memory .
  - Patient was elated and had euphoric mood.
  - He also had auditory and visual hallucinations . **MMSE : 21.**
  - Cranial nerves , motor system and sensory system examination was normal.
- CVS: S1S2 heard
- RS: AEBE
- PA: Soft and Non tender

Investigations :

Investigation	Values
CBC	WNL
RFTS	WNL
LFTS	WNL
Sr. electrolytes	WNL
Sr. proteins	WNL
Sr. ca , ph , Mg	WNL
Urine R/M	WNL
BSL ®	

Investigations	Values
HIV	Negative
HBsAg	Negative
HCV	Negative
Dengue	Negative
Widal	Negative
RMT	Negative
Sr. VDRL	Negative
Blood culture	Negative

- **MRI brain** : No Abnormality
- **CSF Examination :**
- **R/M :-**

1. Sugars: 73
2. Proteins**: 92.7**
3. Cells**: 20 Lymphocytic cells**

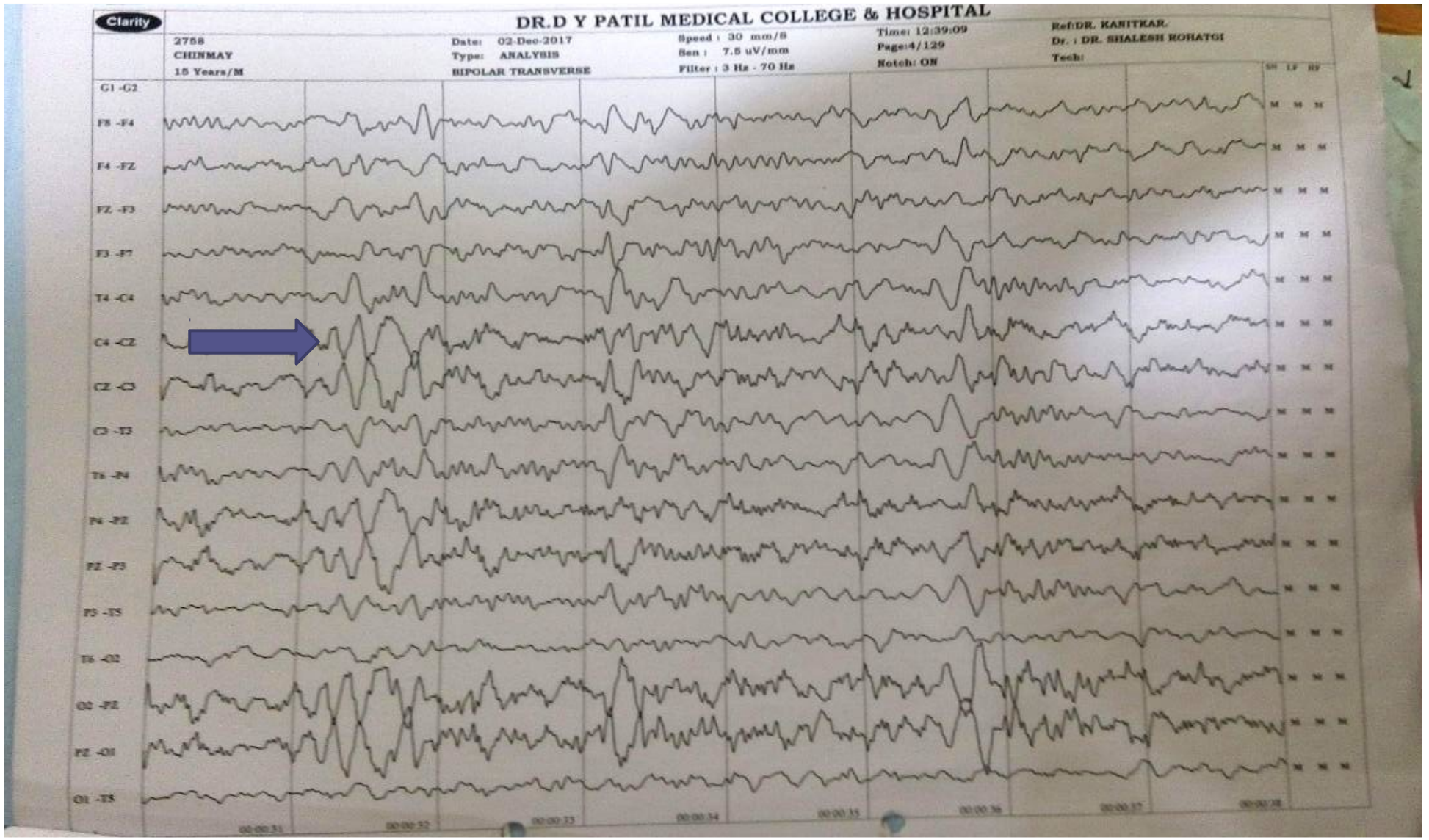
- **C/S :-** No Growth

Differential diagnosis :

- After looking at CSF picture we made a differential diagnosis of and accordingly further work up planned :
- ? Viral encephalitis (infectious cause)
- ? Autoimmune encephalitis (immune cause)
- ? Hashimotos encephalitis
- ? Idiopathic

- CSF : HSV PCR : not detectable (most common viral cause)
- ANTI TPO antibodies : negative
- EEG : s/o **Records of Generalized Seizures**.

EEG showing sharp waves s/o records of GTCS



- Then we thought of ? **Autoimmune CAUSE**
- **ANTI NMDA (N-methyl D-aspartate Receptor) Antibodies:** Strongly **Positive.**
- Hence made a diagnosis of autoimmune NMDR encephalitis.

Treatment given :

- On admission we started on antiepileptics , TAB phenytoin 100 mg BD and TAB lacosamide 50mg BD and tab haloperidol HS.
- Then after diagnosis we started with inj methyl prednisolone 500 mg for 5 days
- And also IVIg 1 gm OD for 3days and oral prednisolone 40mg od we continued.
- Now patient is showing slight and slow improvement in his euphoric behaviour and involuntary movement .

Autoimmune encephalitis :

- Autoimmune encephalitis causes sub acute deficits of memory and cognition ,often followed by suppressed level of consciousness or coma.
- Appropriate autoantibody testing can confirm specific diagnoses, although this is often done in parallel with exclusion of infectious and other causes.
- There are many autoimmune antibodies eg: Voltage gated K+ channel antibodies, GAD-65, Anti LG 1 ,anti GABA antibodies.
- Among these anti NMDR antibodies are most common in young age group a/w tumours(teratomas of ovaries),many cases are not a/w tumours.

- Anti NMDAR encephalitis has characteristic clinical symptoms of psychosis and memory impairment along with abnormal movement, seizures, and depressed levels of consciousness emerging later.
- The response to immuno therapy is good but may take many months to reach its full effects .
- The incidence is **2-3 / 1,00,000** cases of encephalitis.
- 40% cases are due to infections, 40% cases are idiopathic , **only 20% cases are immune mediated.**

(With **the largest being Anti NMDA 4%** and 3% cases are Voltage gated K+ channel Positive)

Take home message:

- Autoimmune encephalitis is a difficult clinical diagnosis due to the similarities in the clinical and imaging findings of many forms of autoimmune and infectious encephalitis. Hence a patient who is presenting with impaired memory, cognition and seizures should think of autoimmune encephalitis .

- If a clear autoimmune cause for the symptoms is established, treatment usually involves escalating immune therapies.