CASE REPORT

Cannabis-induced Seizure: A Case Report

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Abstract

Cannabis is one of the most commonly used illicit drugs in India as well as in the world. Until recently, very few studies regarding cannabis and its various effects were studied. With more countries and states all over the world legalizing, more studies regarding various harmful effects of cannabis and its side effects are being studied.[1] Here we present a 16-year-old male patient who came with a history of cannabis abuse for 2 years. He came with complaints of abdominal pain and developed seizures later on. Diagnosed to have a cannabis-induced seizure. Cannabis abuse through its various vascular and toxic mechanisms could explain the seizure.

Keywords: Cannabis, Complications, Seizure, Toxic.

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Introduction

Cannabis or marijuana is one of the most commonly abused drugs all over the world. It's a naturally grown plant. Generally it's smoked, but can be ingested, or taken orally. The relationship between cannabis and seizure is still controversial and more and more studies are being done with many cases being reported. Interestingly many studies have shown that cannabis and cannabinoids its active substance that have anti-epileptic effects, especially for tonic-clonic and focal seizures. The studies done regarding this are less and more studies need to be done to assess it.[2]

Case Report

The sixteen-year-old male came with complaints of pain abdomen and vomiting for 1 day.

The pain was insidious in onset, diffuse, dull aching type of pain, continuous for last 1 day.

Vomiting was non projectile, contained food particles, and was not associated with blood.

No h/o loose stools, burning micturition. No h/o fever, trauma, headache. H/o substance abuse (marijuana) for the last 2 years and was diagnosed as cannabis-induced psychosis. Abstinent for the last 1 week.

H/o sudden behavioral change with the loss of consciousness for the last 1 year.

Subsequently on the night of admission patient developed seizures with loss of consciousness, uprolling of eyeballs and tongue bites, and generalized tonic-clonic seizure.

Patient SpO_2 kept fluctuating and was in a post ictal state, oxygen was started via nasal prongs, and saturation stabilized.

All routine investigations were sent, and all were within normal limits except sodium—125 mEq, and potassium—1.6 mEq. Immediate correction using Inj KCL 40 mEq in 1 pint NS over 4 hours was started and 2 pint NS, DNS was started.

USG abdomen—no sonological abnormality.

The patient was intubated and connected to mechanical ventilation in volume control mode.

ABG was done—pH—7.32, PCO_2—53 mm Hg, PO_2—255 mm Hg, HCO_3—27.3, Na—116, K—1.8.

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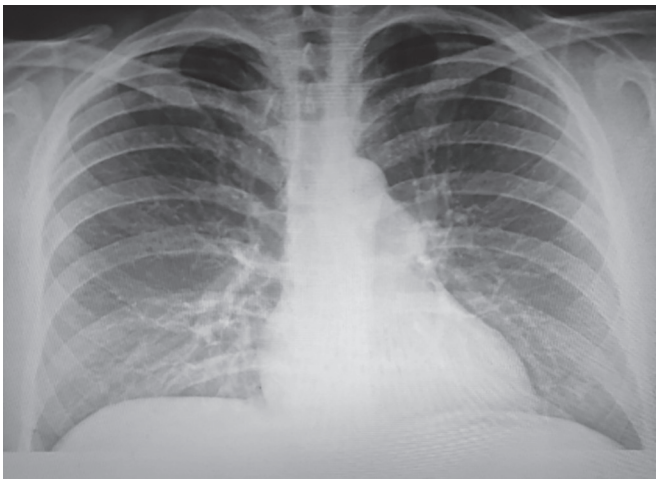


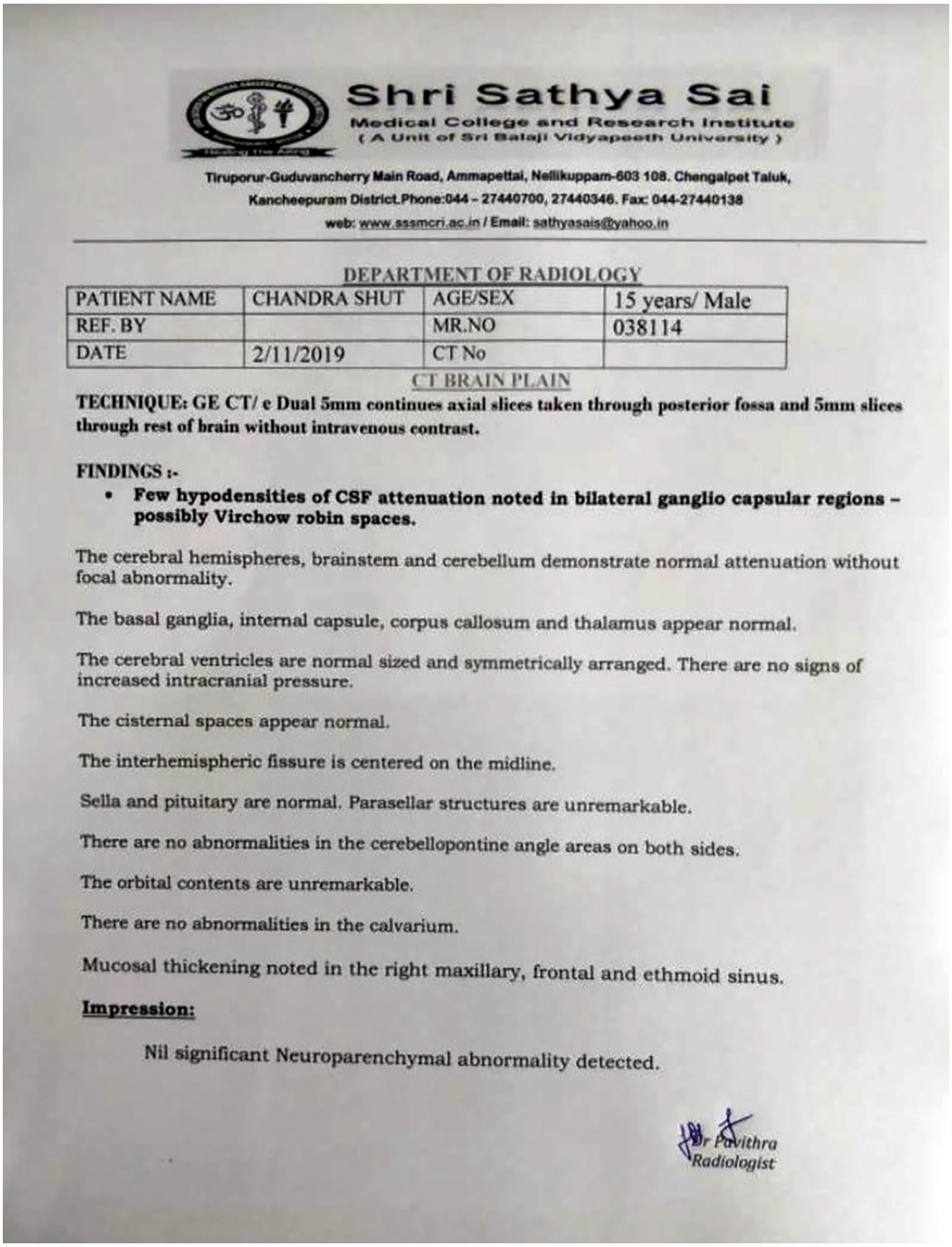
Fig. 1: Repeat chest X-ray

A chest X-ray was repeated to rule out aspiration pneumonitis (Fig. 1).

CT brain was done—nil neuroparenchymal abnormality (Fig. 2).

The patient was started on Inj sodium valproate 250 mg in 100 mL NS over 1 hour BD.

Psychiatry opinion was obtained and impression of substance abuse (cannabis), illness-related anxiety, and lorazepam was



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DEPARTMENT OF RADIOLOGY

PATIENT NAME	CHANDRA SHUT	AGE/SEX	15 years/ Male
REF. BY		MR.NO	038114
DATE	2/11/2019	CT No	

CT BRAIN PLAIN

TECHNIQUE: GE CT/ e Dual 5mm continues axial slices taken through posterior fossa and 5mm slices through rest of brain without intravenous contrast.

FINDINGS :-

- **Few hypodensities of CSF attenuation noted in bilateral ganglio capsular regions – possibly Virchow robin spaces.**

The cerebral hemispheres, brainstem and cerebellum demonstrate normal attenuation without focal abnormality.

The basal ganglia, internal capsule, corpus callosum and thalamus appear normal.

The cerebral ventricles are normal sized and symmetrically arranged. There are no signs of increased intracranial pressure.

The cisternal spaces appear normal.

The interhemispheric fissure is centered on the midline.

Sella and pituitary are normal. Parasellar structures are unremarkable.

There are no abnormalities in the cerebellopontine angle areas on both sides.

The orbital contents are unremarkable.

There are no abnormalities in the calvarium.

Mucosal thickening noted in the right maxillary, frontal and ethmoid sinus.

Impression:

Nil significant Neuroparenchymal abnormality detected.

Dr Pavithra
Radiologist

Fig. 2: CT-BRAIN—showed nil significant parenchymal abnormality

advised. The patient had another episode of seizure and it subsided after injecting sodium valproate. EEG was advised to the patient but the patient's attender refused and wanted discharge. On discharge patient's electrolytes were within normal limits and all his complaints had subsided, patient also had no more episodes of seizures.

Discussion

Cannabis or marijuana is one of the most commonly used illegal drugs. It is possible to become dependent on/even addicted to regular use. People who regularly use marijuana and abruptly stop can experience withdrawal symptoms. THC-delta 9-tetrahydrocannabinol is the primary psychoactive associated with marijuana. Cannabis withdrawal is clinically significant because it is associated with elevated functional impairment to normal daily activities, and the more severe the withdrawal is the more severe the functional impairment is. Cannabinoids influence major levels of catecholaminergic transmitters and also influence thalamocortical projections which could alter seizure threshold by increasing synchronicity use.[3,4]

The research has been very promising that potential beneficial links between the two marijuana (CBD) and seizure are being looked into. In the majority of the patients done by them, there

was at least some reduced level of seizure seen with the use of medical cannabis and in some patients, seizures were completely absolution. However, there are no guidelines or regulations for how marijuana can be manufactured and given for medicinal purposes. Cannabis/marijuana is illegal in many states and countries.[5]

Conclusion

Cannabis abuse through its various effects can lead to numerous abnormalities including seizures as we reported in the case. Cannabis is still illegal in our country and more studies need to be done to assess its relation to seizures and other brain abnormalities.

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