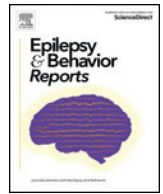




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## Case Report

# A patient with epilepsy charged with kidnapping, unlawful confinement, and assault causing bodily harm after seizures: Deficiencies in the legal system



Alyssa Denton, Jose F. Tellez-Zenteno \*

Saskatchewan Epilepsy Program, Department of Medicine, Division of Neurology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada

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## ABSTRACT

We report the rare case of a 34-year-old right-handed male who had drug-resistant epilepsy associated with a frontal cavernoma since the age of 13 who was convicted of criminal charges related to seizures. When he was 32 years old, he had a focal seizure with impaired awareness and then he tried to grab a 7-year-old girl who was in a car coming out from a dance class. He was arrested and taken to the police station. Later that day, the patient was being interrogated by a police officer when he had a hypermotor seizure at the end of the interview. He punched the policeman leading to multiple charges laid, including kidnapping, unlawful confinement, and assault causing bodily harm. He remained in jail for the next year and a half. During this time, he had epilepsy surgery for resection of the cavernoma. The patient was rendered seizure-free after resection of the cavernoma for one-year. Due to the occurrence of seizures before the alleged “kidnapping” and based upon his interview with the policeman, the patient was acquitted from all legal charges. We review available cases of non-homicidal criminality with a legal outcome in this article.

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## 1. Introduction

The association of criminal acts and epileptic seizures is an uncommon event and it is not commonly reported in the literature [1]. If such association is present, seizures are commonly considered as a defense or mitigating factor in criminal trials [1]. The idea that epileptic seizures may be linked to aggressive behavior and crimes of violence in the late nineteenth and early twentieth century, supported by writings of the Italian Professor of Psychiatry and Criminal Anthropology, Cesare Lombroso [2]. Lombroso tried to discern a potential relationship between criminal psychopathology and physical or constitutional defects. His main theory quoted by him is “*the existence of a hereditary, or atavistic, class of criminals who are in effect biological throwbacks to a more primitive stage of human evolution*” [2]. Lombroso contended that such criminals exhibit a higher percentage of physical and mental anomalies than non-criminals [2]. A potential link between an epileptic seizure and violence was also made around the same time by Hughlings Jackson, considered one of the founding fathers of epileptology [3]. In 1875, Jackson published an article entitled “On temporary mental

disorders after epileptic paroxysm” in which he described a patient with epilepsy who exhibited episodes of violent behavior [3]. These initial reports and others created the idea that epilepsy and recurrent epileptic seizures could be associated with violent and criminal behavior, which may have contributed to the stigma and the negative perception of epilepsy in the general population. Recently Saleh et al. [1] published a systematic review evaluating the published scientific literature on the possible relation between epileptic seizures and criminal acts. The review draws interesting observations: a) the literature on the relation between epileptic seizures and criminal acts is not conclusive, b) behavioral disturbances often seem more closely related to comorbidities of epilepsy than particular seizures characteristics, c) these comorbidities are often not well-described, d) the reviewed literature suggests that there are very rare occasions when criminal acts are committed during the ictal or postictal period, mostly by patients with focal epilepsy. The authors suggest that there is an urgent need for more systematic and detailed descriptions in order to allow a more detailed investigation of the relation between epileptic seizures and criminal acts.

## 2. Case report and legal outcome

We report the case of a 34-year-old right-handed male with drug-resistant epilepsy who committed multiple criminal offenses. Our patient began to experience seizures at the age of 13. He had two types

\* Corresponding author at: Department of Medicine, Division of Neurology, Royal University Hospital, 103 Hospital Drive, BOX 26, Room 1622, Saskatoon, SK S7N 0W8, Canada.

E-mail address: [jose.tellez@usask.ca](mailto:jose.tellez@usask.ca) (J.F. Tellez-Zenteno).

of seizures. The first seizure type was focal seizures with impaired awareness described as staring spells, a lack of awareness, lasting 40 to 50 s with post-ictal confusion. The second type of seizure was typical a hypermotor seizure with at least 80% of the seizures happening at night. The latter type are characterized by no warning, non-sensical speech at onset, sudden hypermotor activity, often aggressive ictal and postictally, not aware, with postictal confusion, and no clear lateralization. Most of the time, the patient is found running away from the scene but always coming back eventually. The family described the presence of at least one hypermotor seizure per month and one focal seizure with impaired awareness per month since the age of 13, with the longest period of seizure freedom of 6 months which occurred twice at 15 and 20 years old. The patient was assessed by a psychiatrist and had a diagnosis at the age of 15 with attention-deficit hyperactivity disorder. Regarding his medical history, he also had a history of drug abuse on and off over the years (cocaine, marijuana and alcohol). Patient continued having seizures for many years with no clear diagnosis till the age of 29 years old when he had a witnessed tonic-clonic seizure. He was seen in the hospital emergency room and referred to an epileptologist. An MRI of the brain showed a lesion over the left cingulate area consistent with a cavernous vascular malformation (Fig. 1). He was started on lamotrigine 100 mg PO BID, later combined with clobazam 10 mg PO BID. He underwent video-EEG monitoring three years later (July 2016) after the diagnosis because the seizures were resistant to antiseizure medications. During video-EEG monitoring two seizures were recorded. One of them was a hypermotor seizure consistent with the typical description by the parents. At the end of the seizure, he ran away from the bed, grabbed a nurse, kissed her, and then went back to the bed. The other seizure was a focal seizure with impaired awareness: he “spaced out” for 50 s and was clapping during the seizure. Interictally, the EEG showed bifrontal spikes at Fp1, Fp2, but also at F7, Sp1. During the two seizures the EEG showed initial bifrontal spikes at Fp1 and Fp2, but maximal expression at FP1, F7, T3 and Sp1, followed by delta slowing in the same electrode derivations with subsequent diffuse delta activity.

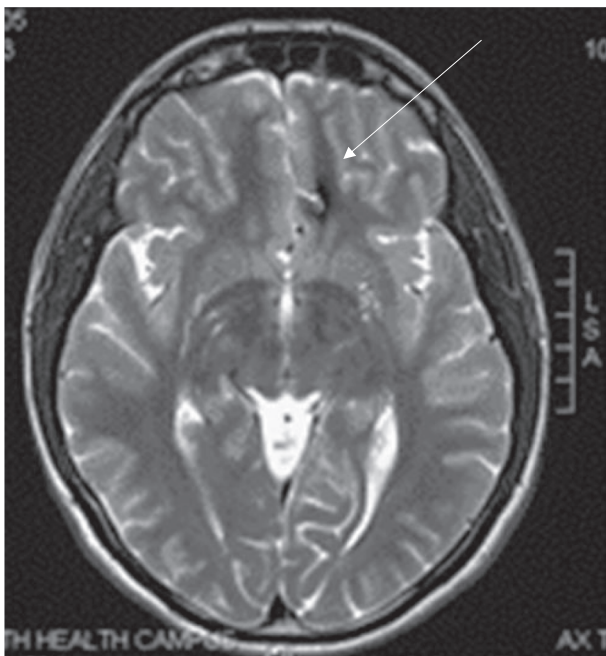
Three months after video-EEG monitoring was performed, he had a focal seizure with impaired awareness, and then tried to grab a 7-year-old girl who was in a car coming from a dance class. The mother of the

girl saw the patient staring before the incident seemingly unaware but outwardly acting aware as he had helped open the door of the car for the mother and girl. The mother asked him few questions with no answer but with automatic behavior. After the girl was in the back seat the patient tried to grab the girl and the mother screamed, and other people arrived at the scene to assist the mother. The patient ran away, and then, he came back to the scene to apologize and wait for the policeman. His behavior was abnormal during this time and while traveling to the police station; he seemed confused the entire time. Later that day the patient was being interrogated by a police office when he had a hypermotor seizure at the end of the interview. He had gibberish speech and proceeded to have a hypermotor seizure similar to the one recorded in hospital. He punched the policeman during the seizure which led to an additional assault charge. By the end of the day, the patient was charged with kidnapping, unlawful confinement, and assault causing bodily harm on two accounts. The patient had not been taking his anti-seizure medications properly days before the incident. The patient had an initial trial, where he was found guilty of kidnapping, unlawful confinement, and assault causing bodily harm to the girl and also to the police officer. He remained in jail for 18 months. His lawyer was able to get a second trial defending the patient on the grounds of his medical condition. During his time in jail, there was a consensus that the patient was candidate to have the resection of the cavernous malformation, and he finally had epilepsy surgery 18 months after the charges were levied. The patient rendered seizure-free after the resection of the cavernoma for one-year. His behavior improved with no seizures or incidents, and he has been free of any recreational drugs. After the surgery, the patient remained on house arrest for a year until the trial was over. The defense lawyer asked a medical legal expert to review the clinical history including imaging and EEG findings, the transcripts from the previous trial and other relevant documents. The prosecutor argued the use of drugs as the cause of the incidents and that he was malingering. There was no evidence of drug use prior to the incident, and more importantly there was a clear occurrence of a seizure before the attempted “kidnapping” and during the interview with police. The seizures that happened during the incidents were similar to the ones recorded during video-EEG monitoring. In the end, the patient was acquitted of all the charges due to having strong evidence of a seizure disorder leading to the associated criminal behaviors.

### 3. Literature review and discussion

The association of criminal acts and epileptic seizures is a very rare event, and it is not well-described in medical literature. Cases happen sporadically in different countries, and some of them are reported in newspapers or other kind of media but are not commonly reported in medical articles. Very infrequently, epilepsy has been used as a defense against charges of murder, homicide, manslaughter, or disorderly conduct [4]. The idea that epileptic seizures could be associated with aggressive behavior and crimes of violence dates back at least as far as the late nineteenth and early twentieth century [2]. From the eighteenth century, there is the notion that patients with epilepsy, especially when they have focal seizures or are in the postictal period, could exhibit episodes of bizarre and violent behavior. Our case is one of the few complete available descriptions of a patient who was accused of kidnapping, unlawful confinement, and assault related with seizures with complete exoneration.

A recent review by Saleh et al. [1] reviewed all the available literature regarding epileptic seizures and criminal acts in PubMed till May 2019. Surprisingly, they only reported 49 cases, and many of them did not have the completed legal information. The review suggests that there are very rare occasions when criminal acts are committed during the ictal or postictal period, mostly by patients with focal epilepsy, although they concluded that the relation between epileptic seizures and criminal acts is not conclusive [1]. Interestingly the authors suggest that behavioral disturbances often seem more closely related to



**Fig. 1.** Figure shows an axial T2-weighted sequence on brain MRI. The arrow highlights a cavernoma in the left mesial frontal region.

comorbidities of epilepsy than particular seizures characteristics, though these comorbidities are often not well-described, calling for an urgent need for more systematic analysis of data and also an improvement in the reporting of cases. PubMed has been indexing biomedical literature since 1879, and the review of Saleh et al. [1] only shows 49 cases, highlighting the need for more reports in the area, describing more detailed information about the type of epilepsy, presence of structural lesions, interictal behavior, detailed description of offenses, psychiatric comorbidity, among other aspects.

Over the years, different researchers have identified characteristics of the violent acts related with epilepsy. Violent acts related with epilepsy occur suddenly, without evident planning, they are short-lived, fragmentary and unstained events, stereotyped, occur after stress, can occur hours or days after seizures, mainly after clusters, usually amnesic of the events, with remorse after events, recurrent and related

with alcohol abuse. In our patient the acts (kidnapping, unlawful confinement, and assault) occurred after seizures when the patient was confused, and he was amnesic of the events. One of the main aspects related with the defense of the case was the fact that kidnapping is a very elaborate crime typically requiring preparation. In this case, he was accused of this paroxysmal behavioral activity during a seizure without any pre-planning. It is generally agreed among epileptologists that well-organized, purposeful, complex, goal-directed behavior is highly unlikely during a seizure [5]. In our patient, the first offense occurred in the post-ictal period but the second offense (punching the police) happened during a seizure (goal directed behavior). Also, researchers have identified some characteristics which make a patient more prone to having violent events. These characteristics include young males aged 20 to 50 years, seizure onset during childhood or adolescence, antiseizure drug resistance, unemployment, a history of

**Table 1**  
The epilepsy defense: non-homicidal criminality.

Author/Case report	# of patients in study	Gender/age	Foci location	Time	Offense	Charge	Final disposition
Oueslati et al. 2018	2	M/26 M/39	Right parietal Right TLE	Postictal Postictal	Attempted to rape aunt Stabbed brother with a knife	Rape NS	AFI, CMH AFI, CMH
Tuft & Nakken 2017	1	M/18	UL	NS	Burglary stopped by police. Friend of patient shot and killed a police officer. Patient was witness to the event and yelled "Give it to him, Chris" which was widely debated about the meaning.	Unspecified degree of murder	IJ; posthumous pardon 40 years after death in prison.
Every-Palmer & Norris 2013	1	M/54	Left TLE	Postictal	EMS staff responded to a call about him being unconscious. He leaped up, grabbed a knife, and attacked the paramedics. He later attacked the police officers with "superhuman strength."	Assault with a weapon	AFI and CMH
Kim et al. 2010	8	M × 6 F × 2 Ages 23–66	Each had either FLE or TLE; not specified per patient	Post-ictal, alcohol-induced, or NS	NS	Rape × 3 Assault × 2 Robbery × 2 Arson × 1	CMH for all
Reuber & Mackay 2008	10	NS	NS	NS	Physically assaulted brother-in-law  Broke into a shop to steal a jacket Exacerbated an electrical fire with paper  Stabbed wife and locked child in cupboard  Assaulted an acquaintance that owed gambling debt, attempted to set said person on fire  Attempted kidnapping in daylight with parent nearby  Attacked paramedic after seizure  Assault of police officer  Attempted kidnapping in daylight with parent nearby, resisted arrest  Accused person of stealing from him and proceeded to head-butt the victim, unprovoked Had a complex partial seizure and grabbed onto a woman's arm as part of an automatism	Assault with GBH Burglary Attempted arson Wounding with intent, unlawful confinement Assault with ABH and attempted GBH Attempted kidnapping Assault with ABH Assault with GBH, possession of dangerous weapon Attempted kidnapping & assault with ABH Assault with ABH NS	CMH  CMH CMH AFI AFI AFI AFI AFI AFI AFI AFI CMH
Treimann 1999	3	M/35	UL	Interictal	Total of 8 incidents of attempted child abduction both in and out of hospital. The attempts were characterized by witnesses as impulsive and unsophisticated.	Attempted child abduction	CMH
McNulty, Cahil, & Tomé de la Granja 1999	1	F/36	FLE	Postictal	Patient became anxious in family home, left abruptly down the street where he encountered a middle-aged woman walking her dog. He subsequently attacked her and removed much of her clothing before being stopped by a passerby.	Felony assault and criminal sexual conduct	AFI

AFI: acquitted for insanity, CMH: conviction in a mental hospital, IJ: Imprisonment-jail, UL: unspecified location, NS: Not specified, FLE: frontal lobe epilepsy, TLE: temporal lobe epilepsy, GBH: Grievous Bodily Harm, ABH: Actual bodily harm.

**Table 2**  
International criteria to determine whether a violent crime was the result of an epileptic seizure.

International panel criteria
1. The diagnosis of epilepsy should be established by at least one neurologist with special competence in epilepsy
2. The presence of epileptic automatisms should be documented by the clinical history and video-EEG
3. The presence of aggression during an epileptic automatism should be verified in a video-recorded seizure in which ictal epileptiform patterns are also recorded on the EEG
4. The violent act should be characteristic of the patient's habitual seizures
5. A clinical judgment should be made by the neurologist, attesting to the possibility that the act (the alleged crime) was part of a seizure

Abbreviation: EEG, electroencephalogram.

learning disabilities, and the presence of psychiatric comorbidity [1,6]. In our case, the presence of drug-resistant epilepsy and a high frequency of seizures were clinically significant factors related to the behavior of the patient.

We performed a review on PubMed up to October 2019 using the keywords “epilepsy and crime” which yielded 500 articles. We identified only 8 articles with a total of 27 patients that reported non-homicidal crimes with legal outcomes. We also reviewed the recent review by Reuber and other specialized articles in the field [1,6]. We aimed to identify cases of non-homicidal criminality in patients with epilepsy and a clear legal outcome. Our review is summarized in Table 1 [7–14]. Although in some cases the type of epilepsy is not described, there is a clear predominance of focal epilepsy, either of frontal or temporal lobe origin. Interestingly, there is one case with multiple attempts of child abduction who was convicted in a mental hospital. In our case, there are some aspects that we believe predispose this patient to aggressiveness such as the presence of a structural lesion in the frontal lobe, drug-resistant epilepsy, frequent seizures, and potentially, the history of drug abuse. Almost all the cases in the literature review of patients who committed criminal acts were events that occurred in the postictal period.

The legal outcome is an important aspect of these cases to assess. In the study of Pandia et al. [6], 50 cases from 1880 to 2013 used epilepsy as a court defense for murder, and they collected information regarding the final sentencing outcomes. With regard to the legal situations in these cases, the review shows that 72% of patients were initially charged with homicide, and 22% with manslaughter. After trial, 62% of patients were convicted of homicide, and 38% were found not criminally responsible for their actions (insanity plea) and were discharged to a psychiatric facility for hospitalization. In the case of non-homicidal criminality, our review shows that all the cases had three outcomes including: acquitted for insanity, conviction in a mental hospital and imprisonment – jail. Our case is one of the few cases in the literature that was completely exonerated of all charges. This patient defense was based on the international criteria to determine whether a violent crime was the result of an epileptic seizure [15]. Our patient fulfilled all of the criteria demonstrating the significant impact of video-EEG monitoring to record an epileptic seizures similar to one occurring during the alleged criminal activity. This is intrinsic to exoneration of charges in the medical-legal arena (Table 2). Another aspect that is relevant in our case is the improvement after epilepsy surgery, which not only rendered him seizure-free, but also improved his behavior. In a similar way to the case described by Pandia et al. [6], epilepsy surgery was used in the legal defense of our case.

#### 4. Conclusion

Non-homicidal criminality associated with epilepsy has been described in the literature for more than a century, although cases are

rarely reported in medical literature and the available descriptions many times do not specify the type of epilepsy, presence of structural lesions, epilepsy surgery, comorbidity, among other aspects. In our review, non-homicidal crime is mainly postictal, and patients typically have focal epilepsy with frontal or temporal localization. Our case is unique because the defense lawyer was able to use the patient's medical condition and the successful outcome from epilepsy surgery as a defense to mitigate legal charges against the patient. The patient was fully exonerated after trial and demonstrates the outstanding and life changing benefits of epilepsy surgery. Given the paucity of information, it is clear that further case reports with detailed description of the seizure disorder and legal outcomes are needed. We hope that our case will add to semiologies misinterpreted as criminal and help decrease the negative perception of epilepsy in the society.

#### Conflict of interest

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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We confirm that we have read the Journal's position on issues involved in ethical public.

#### Ethical statement

The work described has been carried out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki).

#### References

- [1] Saleh C, Reuber M, Beyenburg S. Epileptic seizures and criminal acts: is there a relationship? *Epilepsy Behav* 2019;97:15–21.
- [2] Monaco F, Mula M, Cesare Lombroso and epilepsy 100 years later: an unabridged report of his original transactions. *Epilepsia* 2011;52(4):679–88.
- [3] Jackson JH. On temporary mental disorders after epileptic paroxysm. *West Riding Lunatic Asylum Med Rep* 1875;5:120–9.
- [4] Gado-Escueta AV, Mattson RH, King L, et al. Special report. The nature of aggression during epileptic seizures. *N Engl J Med* 1981;305(12):711–6.
- [5] Shih JJ, LeslieMazwi T, Falcao G, Van GJ. Directed aggressive behavior in frontal lobe epilepsy: a video-EEG and ictal spect case study. *Neurology* 2009;73(21):1804–6.
- [6] Pandya NS, Vrbancic M, Ladino LD, Tellez-Zenteno JF. Epilepsy and homicide. *Neuropsychiatr Dis Treat* 2013;9:667–73.
- [7] Tuft M, Nakken KO. The hanging of Derek Bentley, a 19-year-old boy with epilepsy. *Epilepsy Behav* 2017;76:136–8.
- [8] Oueslati B, Fekih-Romdhane F, Ridha R. Postictal delirium and violent behavior in patients with post-neurosurgical epilepsy. *World Neurosurg* 2018;115:193–5.
- [9] Every-Palmer S, Norris J. Not guilty by reason of epilepsy. Post-ictal delirium and psychosis resulting in violent offending. *Aust N Z J Psychiatry* 2013;47(10):961–2.
- [10] Kim JM, Chu K, Jung KH, Lee ST, Choi SS, Lee SK. Characteristics of epilepsy patients who committed violent crimes: report from the National Forensic Hospital. *J Epilepsy Res* 2011;1(1):13–8.
- [11] Reuber M, Mackay RD. Epileptic automatisms in the criminal courts: 13 cases tried in England and Wales between 1975 and 2001. *Epilepsia* 2008;49(1):138–45.
- [12] Treiman DM. Violence and the epilepsy defense. *Neurol Clin* 1999;17(2):245–55.
- [13] McNulty C, Cahil K, de la Granja MB. Attempted child-stealing: post-ictal psychosis and psychological distress. *Med Sci Law* 1999;39(2):146–52.
- [14] Bacon PD, Benedek EP. Epileptic psychosis and insanity: case study and review. *Bull Am Acad Psychiatry Law* 1982;10(3):203–10.
- [15] Gado-Escueta AV, Mattson RH, King L, et al. The nature of aggression during epileptic seizures. *Epilepsy Behav* 2002;3(6):550–6.