



# The medical-legal aspect of sexual deviant behaviors due to brain lesions: A case report and narrative review of the literature



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## ABSTRACT

We reported a case of sexual assault in a 60-year-old male with no history of mental illness. The lack of memory about the time of the assault and the patient's uncharacteristic behaviour suggested sexual deviant behaviour secondary to a brain lesion. Further investigations revealed a lentiform stroke. A possibility of abnormal sexual behaviour due to an epileptic seizure and/or a destructive brain lesion is suggested. We summarized the history of our patient in this paper and provided a review of the medico-legal aspects of hypersexuality and sexual deviant behaviors due to brain disorders.

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## 1. Introduction

Sexual complaints have been reported in patients with brain lesions. The importance of the brain and, in particular, the temporal lobe in neurobehavioral disorders was first shown in 1888 by Brown and Schaefer.

They noticed that a temporal lobectomy in monkeys can lead to a wide range of behavioral abnormalities, including changes in sexual behaviors (Brown & Schaefer, 1888). These findings were later proved in detail by Kluver and Bucy. After a bilateral temporal lobectomy in rhesus monkeys, they reported a combination of neurobehavioral changes, including excessive oral tendencies, visual agnosia, loss of fear and anger, and a tremendous increase in hetero/homo and autosexual activities, named Kluver Bucy Syndrome (KBS) (Klüver, 1939; Klüver & Bucy, 1996). Terzian et al. reported the first human case of KBS in a patient with bilateral temporal removal for the treatment of intractable seizures (Terzian & Ore, 1955). Since then a range of brain lesions, from

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encephalitis to trauma and stroke, have shown to present with a range of behavioral disinhibition, including sexual deviant behaviors (Baird, Wilson, Bladin, Saling, & Reutens, 2007; DelBello et al., 1999; Kobayashi, 2004; Langevin, 2006; Marlowe, Mancall, & Thomas, 1975; Terzian, 1996).

This case report summarizes the history of a patient admitted in our forensic psychiatry unit with a history of behavioral impulsivity and sexual assault. Investigations suggested a diagnosis of stroke, with the possibility of deviant sexual behavior due to epileptic seizure or disinhibition phenomenon due to the brain lesion. We also summarize current medico-legal aspects of sexually deviant behaviors due to brain lesions.

## 2. Review of the literature

The current literature regarding the medico-legal aspects of sexually deviant behaviors due to brain lesions has remained largely silent. It is possible that patients presenting with brain lesions to be involved in criminal activities. While this scenario is quite challenging for patients, it is also challenging for forensic psychiatrists and lawyers who may be required to assist in defining the level of criminal responsibility. Ironically, despite a relatively high prevalence of behavioral changes due to structural brain lesions, studies covering forensic aspects of such disorders are scarce. In addition, many patients have been found criminally responsible prior to the discovery of a neuropsychiatric disease and a forensic assessment (Table 1).

In the definition and classification of hypersexuality and sexually deviant behaviors it is important to differentiate between an excessive increase in sexual desire versus disinhibited sexual behaviors due to the involvement of paralimbic and neocortical frontotemporal lobe. During the phase of sexual arousal, the temporal and parietal cortices are deactivated and at the same time putamen and claustrum are often activated (Poeppl, Langguth, Laird, & Eickhoff, 2014). Therefore, any lesion in these areas may cause abnormal sexual behaviors.

Case reports of hypersexualism with a presentation of seizure activities are quite rare. An unusual case of postictal sexual seizure was reported by Anson, Kuhlman (Anson & Kuhlman, 1993). They reported a 29-year-old woman with abnormal behaviors, including hyperphagia and periodic sexual behaviors, namely masturbating in public and soliciting intercourse with family members and neighbors without any memory (Anson & Kuhlman, 1993). The mechanism for hypersexual behavior is not limited to seizure activities. Although hypersexuality has been reported in patients with TLE, it may be more prevalent after destructive temporal lesions, such as temporal lobectomy (Baird, Wilson, Bladin, Saling, & Reutens, 2002, 2003; Blumer, 1970; Blumer & Walker, 1967). In fact, hypersexuality is the most common sexual complaint among these patients (Blumer & Walker, 1967; Demerdash, Shaalan, Midani, Kamel, & Bahri, 1991; Herzog, Seibel, Schomer, Vaitukaitis, & Geschwind, 1986; Kolárský, Freund, Machek, & Polák, 1967; Shukla, Srivastava, & Katiyar, 1979). In addition, the majority of patients after the temporal lobectomy may have an improvement/no change in their

**Table 1**  
Case reports of sexual deviant behaviors with their forensic assessment results.

Authors/year	History	Sexual deviant behaviors	Forensic assessment		
			Convicted	Assessed before diagnosis	Assessed after diagnosis
Mitchell, Falconer, and Hill (1954)	A 38-year old man with abnormal EEG, Left lateral ventricular dilation in pneumoencephalography	Fetishism since age 8 to 11. Symptoms relieved by temporal lobectomy	NA	NA	NA
Terzian and Ore (1955)	A 19-years old man with a history of bilateral temporal removal for the treatment of intractable seizures	Klüver-Bucy syndrome after the surgery	NA	NA	NA
Davies and Morgenstern (1960)	A case of cysticercosis, temporal lobe epilepsy and transvestitism	Transvestitism	NA	NA	NA
Ball (1967)	A 46-year old man suffering anxiety, invasive tumour affecting the left temporal lobe	Early onset hair fetishism and transvestitism. Dismissed from the university and then army because of sexual behaviors	Sentenced jail for a short period.	Not reported	Not reported
Anson and Kuhlman (1993)	A 19-year-old lady with a history of epilepsy and temporal lobectomy	Recurrent transient Klüver–Bucy syndrome, presented with masturbation in public, soliciting intercourse with family member/neighbours, and bulimia	NA	NA	NA
Mendez, Chow, Ringman, Twitchell, and Hinkin (1999)	2 males with frontotemporal dementia and bilateral hippocampal sclerosis. Right temporal lobe hypometabolism on positron emission tomography	Late onset pedophilia	Not reported	Not reported	Not reported
Burns and Swerdlow (2003)	A 40-year-old healthy man with an orbito frontal tumor	Impulsive sexual behavior with pedophilia, child pornography. Had suicidal idea and fear that he would rape his landlady. Symptoms decreased after surgery but recurred with tumor regrowth	Convicted before diagnosis of brain tumor and legally removed from the home	Not reported	Not reported
Husted, Myers, and Lui (2008)	A late teenage male with delay in developmental milestones, low IQ, ADHD, ODD, conduct disorder, various depressive mood disorders, and antisocial personality disorders; partial complex and absence seizures	Kidnapping and rape of a young woman	Yes	Yes	Yes
Appelbaum (2009)	A case of rapist, his defense lawyer never contested that he had committed the assault. Decreased function in frontal lobe PET	Rapist	Yes	Yes	Yes
Devinsky, Sacks, and Devinsky (2010)	A 51-year-old man a history irritability, hyperphagia, and sexual deviant behaviors one month after posterior temporal resection for the treatment of epilepsy	Hypersexuality, coprophilia, frequent masturbation, more sexually active with his wife, compulsively watch adult and child pornographic images	Yes	Yes	Yes
Pelin and Yazla (2012)	A 31-year-old with nocturnal epileptic seizures, enlarged sylvian fissures	Masturbation episodes, walking around and nonsense talking during sleep	NA	NA	NA

Abbreviations: ADHD: attention-deficit hyperactivity disorder; EEG: electroencephalogram; ODD: oppositional defiant disorder; SPECT: Single-photon emission computed tomography, NA: Not available.

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