

Case Report

## Excessive masturbation after epilepsy surgery

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### Abstract

Sexual behavior changes as well as depression, anxiety, and organic mood/personality disorders have been reported in temporal lobe epilepsy (TLE) patients before and after epilepsy surgery. The authors describe a 14-year-old girl with symptoms of excessive masturbation in inappropriate places, social withdrawal, irritability, aggressive behavior, and crying spells after selective amygdalohippocampectomy for medically intractable TLE with hippocampal sclerosis. Since the family members felt extremely embarrassed, they were upset and angry with the patient which, in turn, increased her depressive symptoms. Both her excessive masturbation behavior and depressive symptoms remitted within 2 months of psychoeducative intervention and treatment with citalopram 20 mg/day. Excessive masturbation is proposed to be related to the psychosocial changes due to seizure-free status after surgery as well as other possible mechanisms such as Kluver–Bucy syndrome features and neurophysiologic changes associated with the cessation of epileptic discharges. This case demonstrates that psychiatric problems and sexual changes encountered after epilepsy surgery are possibly multifactorial and in adolescence hypersexuality may be manifested as excessive masturbation behavior. © 2003 Elsevier Inc. All rights reserved.

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### 1. Introduction

Among the localization-related epilepsies, mesial temporal lobe epilepsy (MTLE) is by far the most common especially when the medically refractory patients are considered. The most common pathologic substrate of MTLE is hippocampal sclerosis (HS) although there are still controversial opinions about its occurrence and relation to the seizures [1]. A variety of psychiatric features such as intermittent depression, anxiety, organic mood/personality disorders, and sexual changes are among the most frequently reported symptoms associated with this syndrome and these symptoms may be seen before or after surgical treatment [2–4]. It was hypothesized that the postsurgical lessening of excitatory epileptogenic activity and relative predominance of seizure-suppressing inhibition within the limbic system may give rise to psychiatric disorders [3]. However, in

these patients, multiple factors, i.e., additional brain injury, type and severity of the epilepsy syndromes, medication effects, psychosocial factors, side of surgery, and cognitive and temperamental attributes, were proposed to contribute to development of psychiatric problems [5].

The relation between MTLE and sexual behavioral changes has been mentioned in the literature for many years. Although interictal hyposexuality is the most commonly described sexual change in MTLE patients [6], during the postoperative period sexual behavior or function changes ranging from the abolition of preexisting paraphilias [7] to a decline in libido or sexual activity, impotence [8], and restoration of “normal” sexual function or hypersexuality [8,9] have been reported. According to recent reports, postoperative sexual changes may occur in the first three postoperative months and may persist several years following temporal lobe resections, significantly more frequently following right-sided resections [9,10].

In this case report, we present an adolescent epileptic patient whose masturbation behavior and depressive symptoms were aggravated following surgery.

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## 2. Case report

This patient was a young girl, 14 years of age, who underwent left selective amygdalohippocampectomy (SAH) 2 years ago. She had had febrile status epilepticus for 3 days when she was 11 months old and, after a few months, afebrile complex partial seizures (CPS) began. She started to have secondary generalized tonic-clonic seizures (SGTCS) after some years, and despite different antiepileptic drugs in mono- or polytherapy regimens she continued to have CPS every 2 to 3 days and SGTCS at least once a month. Seizures occurred primarily during the day and she also had frequent isolated auras characterized by epigastric sensation and intense fear.

### 2.1. Seizure localization

Presurgical neuropsychological investigation revealed ictal discharge starting from the left mesial temporal region during video-EEG monitoring, left-sided hippocampal sclerosis on MRI, and verbal memory disturbances with mild mental retardation and attention deficit. There were no signs of bilateral involvement and all findings implicated the left mesial temporal region. Presurgical psychiatric evaluation was not significant except for mild sleep disturbances and irritability which did not require treatment.

### 2.2. Postoperative follow-up

During her follow-up visits at 6 and 12 months, the EEG was normal and neuropsychological tests showed marked improvement. Furthermore, she was completely seizure free after the surgery and her lamotrigine dose was decreased to 100 mg/day from 300 mg/day successfully.

### 2.3. Masturbation behavior

One year after surgery, her mother complained of her behavioral problems such as excessive masturbation in inappropriate places. She said that before the surgery, her daughter masturbated occasionally when alone, but she did not consider it a problem at that time. However, 9 months after the surgery, masturbation behavior gradually increased to several times a day in inappropriate public places such as the classroom, school bus, and family events. She stimulated herself by rubbing her genitalia on the edge or corner of objects, i.e., table, rock. Family members felt extremely embarrassed, and were very upset and angry, since her behavior was unacceptable to them.

### 2.4. Psychiatric history and interview

She was born as the youngest of three children of a family living in a city located in eastern Anatolia. She

lived with her father, mother, 20-year-old sister, 18-year-old brother, and a 6-month-old brother. She was able to continue primary school with low school performance but without problems with her friends and school staff.

The psychiatric interview revealed that she had been sexually abused 2 months before the surgery by a neighbor's son who was 5 years older than her. He stimulated her genitals manually with her clothes on; she was able to get away from him, and never saw him again. It was also reported that a number of life events occurred during the pre- and post-operative periods such as her sister's marriage and brother's birth, 4 and 7 months, respectively, after surgery, and all the family members were preoccupied with these events. The psychiatric history of the family was positive only for the mother's major depression, which was treated 4 years earlier.

During the psychiatric examination she was silent, withdrawn, and avoidant and gave short answers to questions with little eye contact. She was hesitant to talk about her masturbation behavior. She could understand that her behavior was somehow inappropriate and made her family angry but she was unable to comprehend fully the reason. Her mood was depressive. Her family reported aggressive outbursts when frustrated, crying spells, social withdrawal, and anergia, which started 3 months after surgery and exacerbated gradually in the last 10 months.

### 2.5. Treatment

Two psychoeducative meetings were conducted with the family to inform and educate them about the patient's difficulties, the nature of her symptoms, their possible relation to epilepsy and surgery, and the behaviors of the family that might aggravate and reinforce the masturbation behavior, such as focusing excessively on masturbation behavior. Positive reinforcement strategies were advised, such as spending some time together or giving positive feedback when she behaved in a positive manner. Citalopram 20 mg/day was started for her depressive symptoms and in a control interview after 2 months the family reported that she had discontinued masturbation and crying spells, and her aggressiveness had also decreased gradually.

## 3. Discussion

There are several reports in the literature suggesting that psychiatric symptoms such as irritability, aggressive behavior, level of adaptive functioning, self-rated mood, and sexual function may improve after temporal lobe resections, although they may continue or exacerbate in

a small proportion of TLE patients [4,5,10]. Changes in sexual function after epilepsy surgery may occur within the first 3 months and persist several years or may subside without intervention [9,10]. Baird et al. demonstrated that in most patients, sexual function increased to a level of “normal” functioning, and in a smaller number of patients sexual function increased or decreased to a level above or below patient-perceived normality. In this study changes in the frequency of masturbation were reported by some patients, but never reached patient-perceived hypersexual levels [10]. In our case hypersexuality was seen following the surgery.

Several hypotheses were proposed to explain the sexual and emotional changes our patient experienced after temporal lobe surgery [9]. First, these changes may be the direct result of surgery itself. In one of the proposed mechanisms, hypersexuality was explained in the context of Kluver–Bucy syndrome. Kluver and Bucy first demonstrated hypersexuality in rhesus monkeys following bilateral temporal lobectomy [11]. This syndrome comprised visual agnosia, hyperorality, an irresistible impulse to react and attend to visual stimuli, emotional changes, changes in dietary habits, and hypersexuality. Kluver–Bucy syndrome or some of its features have also been observed in humans following bilateral temporal lobectomy [12] although there is one reported unilateral case following left anterior temporal lobectomy [13]. No bilateral involvement was documented during postoperative assessment carried out with noninvasive techniques in this patient. However, it is still difficult to exclude its presence although she manifested only hypersexuality and emotional changes and not the other features.

The cessation of epileptic discharges following surgery that releases the limbic system inhibition that underlies preoperative hyposexuality is another proposed mechanism for postoperative rebound hypersexuality [6]. Baird et al. described seven patients who spontaneously reported hypersexuality after unilateral temporal lobe resection, but all patients were adults and none had reported excessive masturbation [9]. This mechanism might also be responsible for hypersexuality in our case. Since our patient was an adolescent without an active sexual life, hypersexuality might manifest in the form of masturbation.

Finally, hypersexuality has been explained as a behavioral feature of adjustment to changes in the family and to expected new role functions after surgery with seizure freedom. Wilson et al. has used the term “burden of normality” to describe the adjustment process following efficacious seizure surgery and it consists of psychological, affective, behavioral, and sociological features as the patients change from chronically ill to cured [14]. Our patient’s hypersexuality and other emotional difficulties might be explained in this context. Her 1-year postoperative follow-up revealed a normal

EEG and markedly improved cognitive tests. However, when the seizures remitted completely, in other words, when she was no longer a focus of interest because of her disability, and her sister’s marriage and brother’s birth distracted the family’s attention completely from her, the symptoms aggravated. Having lost her overvalued position in the family she might have turned her attention to her body and focused on her genitalia for pleasure. In addition, her unfortunate sexual abuse may have taught her to get pleasure by stimulating herself through masturbation.

The onset of masturbation during childhood and adolescence has often been reported to be associated with a genitourinary disorder, sexual abuse, or a stressful life event like weaning, the birth of a sibling, or separation from loved ones, which were almost all present in our case. Negative information about and attitudes toward masturbation are reported to be a common response of parents when confronted with their children’s masturbation [15]. Her parents’ negative attitude might have played a role in reinforcing the patient’s behavioral and depressive symptoms.

On psychiatric examination she had symptoms of depressed mood, anergia, irritability, and anxiety, and was administered citalopram 20 mg/day for her dysphoric symptoms; two psychotherapeutic and psychoeducative sessions were conducted with the family and included parental guidance and education for behavior modification. After 2 months, her symptoms subsided and there has not been any masturbation activity during the last month.

This case demonstrates that in adolescent patients hypersexuality may be manifested as excessive masturbation behavior and psychiatric problems and sexual changes encountered after epilepsy surgery may be multifactorial and may require multidimensional treatment.

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