



CATAMENIAL EPILEPSY IN A WOMAN WITH GIANT UTERINE FIBROID AND PRIMARY INFERTILITY: A RARE CASE REPORT

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ABSTRACT

Background: Catamenial epilepsy is a menstrual cycle–related pattern of seizure exacerbation driven by cyclical hormonal variation, particularly fluctuations in the estrogen-to-progesterone ratio. Recognition of the syndrome is clinically important because it may be missed unless seizure timing is correlated with the menstrual cycle. Coexistence with a giant uterine fibroid and primary infertility is uncommon and adds complexity to management. [1-5,7-13]**Case Presentation:** A 27-year-old nulligravida presented with heavy menstrual bleeding and dysmenorrhea of two months' duration. She had a six-year history of primary infertility and a known diagnosis of catamenial epilepsy since the age of 21 years following drainage of a right frontoparietal brain abscess. Despite treatment with lamotrigine and levetiracetam, her seizures occurred predictably from three days before menstruation to three days after onset of menses. She also had repaired Tetralogy of Fallot, hypothyroidism, and previously corrected severe anemia. Clinical examination suggested a uterus enlarged to 18–20 weeks' size. Ultrasonography demonstrated a large posterior wall intramural fibroid measuring 12.2 × 14 cm. She underwent abdominal myomectomy, and histopathology confirmed leiomyoma. The postoperative period was uneventful.**Conclusion:** This case illustrates the need for multidisciplinary care in women with catamenial epilepsy and coexisting gynecologic pathology, especially when fertility preservation is desired. [1-5,10-13]

KEYWORDS

Catamenial Epilepsy; Uterine Fibroid; Infertility; Myomectomy; Epilepsy; Case Report

INTRODUCTION

Catamenial epilepsy is a subtype of epilepsy in which seizure frequency or severity worsens in a cyclical relationship with the menstrual cycle. The condition is classically linked to dynamic hormonal changes across the cycle, especially a relative decline in progesterone and/or a rise in the estrogen-to-progesterone ratio. Three commonly recognized patterns have been described: perimenstrual, periovulatory, and luteal phase exacerbation. Diagnosis is primarily clinical and depends on the careful review of seizure and menstrual diaries over consecutive cycles. [1-5]

Catamenial epilepsy is clinically important because it often remains underrecognized, particularly in reproductive-age women who first present to gynecology, emergency medicine, or general outpatient clinics rather than neurology services. In a substantial proportion of women with epilepsy, seizures show at least some menstrual relationship, and targeted therapy may be needed in addition to baseline antiseizure treatment. [1-5]

Uterine fibroids (leiomyomas) are the most common benign tumors of the female genital tract and are a frequent cause of abnormal uterine bleeding, dysmenorrhea, pelvic pressure, anemia, and infertility-related complaints. Their classification by FIGO and their clinical impact depend on location, size, and relation to the endometrial cavity. Fibroids that distort the cavity are the lesions most consistently associated with reduced fertility and adverse reproductive outcomes. [6-13]

The coexistence of catamenial epilepsy, a giant uterine fibroid, and primary infertility is unusual and creates a management challenge because neurological control, fertility preservation, and perioperative safety all need to be considered simultaneously. This report highlights the importance of interdisciplinary care in such patients. [1-5,7-13]

CASE PRESENTATION

A 27-year-old nulligravida presented with heavy menstrual bleeding for two months associated with dysmenorrhea. Her menstrual cycles were regular, with bleeding lasting 5–6 days. She had been married for six years and had not conceived despite regular unprotected intercourse, suggesting primary infertility.

She had been diagnosed with catamenial epilepsy at 21 years of age after drainage of a right frontoparietal brain abscess. She was receiving lamotrigine 100 mg twice daily and levetiracetam 500 mg twice daily. Her seizures were predominantly myoclonic, lasting 1–2 minutes, and occurred in a stereotyped pattern from three days before menstruation to three days after onset of menses. These episodes were not associated with loss of consciousness or prodromal symptoms. Her most recent seizure had occurred on the first day of the last menstrual period.

Her additional comorbidities included repaired Tetralogy of Fallot, hypothyroidism treated with levothyroxine, and previously corrected severe anemia. On examination, she was pale and undernourished, with a body mass index of 14.9 kg/m². Abdominal examination revealed a bulky uterus. Pelvic examination demonstrated an anteverted uterus enlarged to approximately 20 weeks' size, with healthy cervix and vagina.

Ultrasonography showed a single large posterior wall intramural fibroid measuring 12.2 × 14 cm. In view of the size of the lesion, symptoms, and desire for fertility preservation, abdominal myomectomy was planned.

The patient underwent abdominal myomectomy under combined general and epidural anesthesia. Intraoperatively, an 18–20-week-size uterus containing a 12.5 × 15 cm posterior fundal intramural fibroid was identified and excised. Both fallopian tubes and ovaries were normal in appearance. Histopathology confirmed leiomyoma. The postoperative course was uneventful.

DISCUSSION

Catamenial epilepsy is thought to result from hormonally mediated changes in neuronal excitability. Estrogen tends to have proconvulsant effects, whereas progesterone and its neuroactive metabolites generally exert anticonvulsant effects. As progesterone falls late in the luteal phase and around menstruation, susceptible women may develop seizure clustering during the perimenstrual period. The three-pattern model described in the literature remains the most useful clinical framework for categorizing this disorder. [1-5]

Diagnosis is best established by documenting the temporal association between seizures and the menstrual cycle. Seizure diaries, menstrual calendars, and in selected cases ovulatory assessment help confirm catamenial patterning. The diagnosis is often delayed because the menstrual relationship is not asked about directly, and many women are initially treated only with routine antiseizure drug escalation without recognition of the hormonal trigger. [1-4]

Treatment is individualized. Options reported in the literature include optimization of antiseizure medications, short courses of benzodiazepines during high-risk phases, acetazolamide, and cyclical or continuous hormonal strategies in selected patients. The NIH progesterone trial showed that progesterone was not uniformly effective for all women with partial epilepsy, but women with greater perimenstrual seizure exacerbation appeared more likely to benefit, underscoring the need for individualized therapy rather than a one-size-fits-all approach. [2-5]

From a gynecologic perspective, uterine fibroids are common,

estrogen-responsive benign smooth muscle tumors with abundant extracellular matrix. They may be asymptomatic or may cause heavy menstrual bleeding, dysmenorrhea, pelvic pressure, urinary symptoms, anemia, and infertility. The PALM-COEIN system classifies leiomyoma as one of the structural causes of abnormal uterine bleeding, and fibroid symptoms often coexist with other reproductive complaints. [6-13]

The relationship between fibroids and infertility is nuanced. Fibroids can interfere with reproduction through distortion of the uterine cavity, impairment of endometrial receptivity, altered uterine contractility, and mechanical effects on implantation or sperm transport. The adverse reproductive effect is strongest for submucosal and cavity-distorting intramural fibroids, whereas non-cavity-distorting subserosal fibroids are less consistently associated with infertility. Available reviews and guidelines support individualized decision-making, particularly when fertility is desired. [7-13]

Myomectomy remains the principal fertility-preserving surgical option for symptomatic fibroids in women who wish to retain the uterus. The ASRM guideline supports myomectomy for cavity-distorting myomas to improve pregnancy outcomes, and ACOG emphasizes that many women seek alternatives to hysterectomy because they desire future childbearing. In a patient with a very large intramural fibroid, heavy menstrual bleeding, bulk symptoms, and primary infertility, abdominal myomectomy is a reasonable and fertility-conscious choice. [10-13]

The present case is clinically notable because the patient had two conditions that each required careful long-term management: catamenial epilepsy and a giant uterine fibroid. Her seizure pattern was clearly menstrual in relation, fulfilling the clinical concept of catamenial epilepsy, while her uterine enlargement and heavy bleeding were attributable to a large intramural leiomyoma. The coexistence of these disorders adds complexity to counseling because interventions for one condition may influence reproductive planning, anesthetic risk, or seizure control. [1-5,7-13]

Multidisciplinary coordination was essential. Neurology input was important to maintain seizure control and avoid perioperative destabilization. Gynecologic surgery was necessary for symptom relief and fertility preservation. Anesthesia planning required additional caution because of her repaired congenital heart disease and severe low body mass. Endocrine and hematologic optimization were also relevant because hypothyroidism and anemia can worsen general perioperative risk. A coordinated approach offers the best chance of a favorable neurological, surgical, and reproductive outcome. [1-5,10-13]

This case therefore reinforces two practical lessons for clinicians: first, women with epilepsy should be specifically asked about menstrual clustering of seizures; second, in women with infertility and large symptomatic fibroids, fertility-preserving surgery should be considered after careful evaluation of fibroid type, symptoms, and reproductive goals. [1-5,7-13]

CONCLUSION

Women with epilepsy should be evaluated for menstrual-related seizure worsening, because recognition of catamenial epilepsy allows individualized treatment and better symptom control. In women with coexisting symptomatic fibroids and a desire for fertility, careful anatomic assessment and fertility-preserving surgery are essential. Coordinated multidisciplinary care is particularly important when neurologic, gynecologic, cardiac, and endocrine comorbidities coexist. [1-5,10-13]

DECLARATIONS

Patient consent: Written informed consent was obtained from the patient for publication of this case report and accompanying clinical information.

Conflict of interest: The authors declare no conflict of interest.

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