A Rare Case Report: Belly Dancer Dyskinesia and Symptomatic Epilepsy in Pregnancy Causing Incomplete Uterine Rupture

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Abstract

Introduction: Belly dancer dyskinesia (BDD) is a visible, involuntary, semicontinuous, waving, and writhing type of abdominal wall movement, which resembles those of a belly dancer. The etiology is unknown, but it is thought to be due to cerebral, spinal, hormonal, or drug-induced effects. Epilepsy as one of the factors of BDD, is considered to have a hi-risk in pregnancy, where 25–33.3% of seizures will increase during pregnancy. Case summary: A 33-year-old multigravid woman in her 34th week of gestation, who had a prior vertical incision C-section, presented with painless, intermittent rhythmic repetitive waving involuntary movements of the abdominal wall with no involvement of other parts of the body since 1 year ago. She was referred from a local hospital after suffering from generalized absence seizures with bizarre abdominal wall movement and irregular abdominal contraction. Basic laboratory tests, including complete blood count (CBC), liver enzymes ([alanine transaminase (ALT), aspartate transaminase (AST), serum creatinine level, and blood urea nitrogen (BUN)] levels were normal. Head-CT showed left temporal infarction. Head-MRI with contrast showed lacunar infarcts in bilateral centrum semilobar, perivascular space in bilateral corona radiate, and bilateral centrum semilobar. Electroencephalography (EEG) results showed wave slowing on the right and left temporal. During hospitalization, she suffered sudden abdominal pain with increasing abdominal wall movements and hematuria then she underwent an emergency cesarean section, and intraoperatively we found an incomplete uterine rupture. Right now she is treated with trihexyphenidyl, levetiracetam, carbamazepine, and haloperidol. She had significant improvement in terms of frequency and degree of abnormal movement.

Discussion: Belly dancer dyskinesia in pregnancy is so rare that only four cases were reported in 2021 worldwide. To our knowledge, there has been no article discussing BDD with incomplete uterine rupture. The etiology of this condition is still multifactorial. Belly dancer dyskinesia is also known to arise from drug induction, which is most commonly caused by antidopaminergic drugs. The management of BDD can be challenging depending on the underlying etiologies.

Conclusion: Belly dancer dyskinesia is a rare type of movement disorder with no clearly understood etiologic agent, pathogenesis, and effective treatment. To understand the etiology and possible mechanisms or pathogenesis as well as to determine the best effective treatment, thorough investigation is important.

Keywords: Belly dancer’s dyskinesia, Case report, Pregnancy, Symptomatic epilepsy.

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Introduction

A disorder known as belly dancer dyskinesia (BDD) causes the abdominal wall to move automatically and involuntarily in a wavy or circular pattern. Although the exact cause of this syndrome is unknown, it is believed to be caused by effects on the brain, spine, peripheral nerves, hormones, or drugs. It may also be idiopathic, functional, or psychogenic. Depending on the cause, there are several therapeutic options available, such as surgical intervention or symptomatic care.1,2 There have only been four case reports of BDD occurring during pregnancy, according to case studies published in the International Medical Case Reports Journal in 2021. It happens as a result of the uterine gravidarum, which causes pressure/compression effects on the spinal spine and its nerve fibers, resulting in irregular abdomen motions. The cause of BDD cannot be determined using any gold-standard diagnostic technique. Routine blood tests, kidney function tests, liver function, electrolytes, and imaging such as ultrasound, CT-scan, EEG, MRI, EMG, fluoroscopy, and echocardiography are often used with unclear results.1,2

Case Summary

A 33-year-old multiparous preterm pregnant woman, presented with irregular abdominal contraction and a history of absence...
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Intraoperative finding: Lower uterine segment shown the wavy, or circular automatic movement of the abdominal wall. The belly dancer dyskinesia is a condition where there is an involuntary, painless, semicontinuous, and waving movements in the abdomen which become more frequent. It occurred from 1–3 per minute to 3–4 repetitions throughout the day.

This movement did not affect her breathing but became more frequent as she spoke. There is a known history of diabetes for approximately 2 years, the patient does not take medication regularly and also suffered from epilepsy since 2014. She routinely went to the neurology clinic and was given trihexyphenidyl, carbamazepine, and haloperidol.

Neurological examination revealed weakness on both sides of the body, increased motor function, muscle tone, and abnormal movements that indicate BDD. Obstetric examination showed previous median CS incision, uterine fundal was at 4 fingers below the xiphoid process, longitudinal, right fetal spine, cephalic with irregular contraction, and no dilatation on the cervix.

Head CT-scan examination revealed acute left temporal infarction. Head MRI with contrast revealed lacunar infarcts in semi lobar centrum bilateral, perivascular space in bilateral corona radiata and semilobar centrum bilateral. Electroencephalography (EEG) examination found right and left waves slowing. In the ultrasound examination, it was found that she was 33 weeks of gestation with single live fetus cephalic presentation, the placenta was in the posterior corpus, sufficient amniotic fluid, and no signs of hypoperfusion in the fetus. Complete blood count examination and urine analysis were within normal limits except for HbA1C 9.2% and 2 hours postprandial glucose was 215 mg/dL.

She was treated conservatively and given dexamethasone intravenously as lung maturation and had trihexyphenidyl, levetiracetam, carbamazepine, and haloperidol for her seizures from the neurology department. In the follow-up treatment, she continued to have regular contractions followed by abdominal pain then later diagnosed with threatened uterine rupture. Intraoperatively, we found she had incomplete uterine rupture. During the postpartum period, abnormal abdominal movements still occur but the frequency has decreased to 2–3 repetitions per day (Fig. 1).

**Discussion**

Belly dancer dyskinesia is a condition where there is an involuntary, wavy, or circular automatic movement of the abdominal wall. The etiology of this condition is still unclear but it is thought to occur due to cerebral, spinal, peripheral, hormonal, or drug-induced effects and can even be idiopathic. In patients with this condition the diagnostic examination and therapeutic options depend on the etiology, including surgical approach or symptomatic treatment. Belly dancer dyskinesia (BDD) which occurs during pregnancy based on case reports published by the international medical case reports journal in 2021 states that there are only four case reports of BDD in pregnancy. Belly dancer dyskinesia in pregnancy is a very rare case of involuntary abdominal movements occurring. Two case reports showed recurrent BDD in subsequent pregnancies and one case report reported BDD that occurred at 8 weeks of gestation. It is estimated that BDD in pregnancy occurs due to the uterus gravidarum and vascular and hemodynamic changes during pregnancy will cause pressure/compression effects on the nerves spine and its nerve fibers, causing abnormal movements in BDD.1,2

Spinal myoclonus (SM) is one of the possible differential diagnoses for this irregular abdominal wall movement. Spinal myoclonus is one of the involuntary abdominal movements brought on by many spinal cord-related diseases. The characteristic of the SM resembles the dyskinesia seen by belly dancers if the thoracic or upper lumbar segments of the spinal cord are affected. This segmental involvement of abdominal contraction may emerge from a brain issue rather than the spinal column. A few studies have suggested a connection between BDD and drugs such as antipsychotics and dopamine antagonists. Drugs like Quetiapine (a conventional antipsychotic), Clebopride (a dopamine antagonist), etc. are among those that cause BDD. The cause of BDD cannot be determined using any gold-standard diagnostic technique. Uncertain findings are frequently obtained from tests including basic blood tests, testing for kidney, liver, and electrolyte function, and imaging tests like ultrasound, CT-scan, EEG, MRI, EMG, fluoroscopy, and echocardiography.1,2

Treatment for BDD is difficult once the condition has been identified. Although several management techniques have been utilized and suggested, none of them have been demonstrated to be the most efficient and secure management techniques for the dyskinesia experienced by belly dancers. There are both surgical and medicinal treatment options. Benzodiazepines, trihexyphenidyl, levetiracetam, valproate, carbamazepine, transcaneous electrical nerve stimulation, and deep brain stimulation are some of the drugs used to treat BDD.1–6

**Conclusion**

Threatened premature labor accompanied by a history of previous cesarean section is necessary to plan the best delivery method, either in the form of TOLAC or planned repeat cesarean delivery (PRCD). So the best delivery method considering that the patient also has a comorbidity in the form of epilepsy and BDD which can increase morbidity and mortality for both mother and fetus was to carry out a planned repeat cesarean delivery. The influence of pregnancy is explained that during pregnancy, especially in the third trimester, where the estrogen/progesterone ratio is high, the risk of epilepsy increases in the last trimester. Considering that seizures are a condition of maternal distress, an immediate delivery method must be planned.

To our knowledge to date, there has been no article discussing BDD with incomplete uterine rupture. Once BDD was diagnosed, the treatment was challenging because none of the treatment...
modalities had been proven effective and safe. Multidisciplinary treatment of this patient requires consideration from anesthesia, neurology, and pediatrics to optimize treatment and prevent complications.

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