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Vestibular Migraine in a Female With Unexpected Pregnancy

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Abstract

Introduction: In the first three months of pregnancy, 23.8% of females experience migraines, and 63.6% have episodes of dizziness, with the most frequent symptom being (35.7%) vertigo. Therefore, vestibular migraine is expected to occur in pregnant women, yet studies in this regard are limited in the literature. We studied such a case in order to determine the safest treatment for patients with possible pregnancy.

Case Presentation: The studied case was a 37-year-old female, who had a history of migraines. She had had vestibular migraines eight times since she was 29 years old. During the second attack, she had been conservatively treated with several anti-vertigo and anti-emetic medications. Because her menses was a little out of schedule, she receive pregnancy test, and to our surprise, the test showed positive results. Afterwards, she was transferred to an obstetric hospital for prenatal examinations and had follow-ups for ten months. Eight months after delivery, the third vestibular migraine occurred. Because of lactation, she did not take any medications; vertigo continued for half a day, and dizziness remitted over the following two days.

Conclusions: Pregnancy is expected to occur together with vertigo in females of the childbearing age, even if they have been diagnosed with sterility. Any anti-vertiginous medication with teratogenic risk should be avoided if pregnancy is not completely excluded, antihistamine diphenhydramine (FDA class B) are recommended first for symptomatic control.

Keywords: Migraine Without Aura, Unexpected Pregnancy, Vestibular Migraine, Vertigo, First Trimester

1. Introduction

Vestibular migraine was confirmed with the following four criteria (1): (i) at least five episodes of severe or moderate vestibular symptoms, including spontaneous internal or external vertigo, positional vertigo, visually-induced vertigo, head motion-induced vertigo, head motion-induced dizziness with nausea, lasting from five minutes to 72 hours, (ii) current or previous history of migraine with or without aura according to criteria of the international classification of headache disorders, (ICHD) third edition (β version) (2) (iii) with at least 50% of the vestibular episodes having one or more migraine features, including (a) headache with at least two of the following characteristics: one-sided location, pulsating quality, moderate or severe pain intensity, aggravation by routine physical activity, (b) photophobia and phonophobia, (c) visual aura, and (iv) unable to be explained by another vestibular disorder or ICHD diagnosis (2).

In a Pacific Northwest pregnancy cohort study (3), 23.8% of females had migraines in the first three months of pregnancy. Besides, 63.6% of females in the first gestational trimester had experienced dizziness at some point; among them, the most frequent symptom (35.7%) associated with dizziness was vertigo, while the second most frequent (21.4%) was deviated gait, unbalanced gait, or unstable floating head sensation. However, during the second and third trimesters, 60.61% and 33.33% experience dizziness, respectively (4). Therefore, vestibular migraine is expected to occur in pregnant females, yet reports in this regard are rare in the literature. Herein, we studied such a case in order to determine the safest treatment for patients with possible pregnancy.

2. Case Presentation

The case under study was a 37-year-old female with body mass index of 21.6 kg/m^2, who did not have any systemic disease. She had no habit of cigarette smoking, alcohol drinking, areca consumption or coffee drinking. Between 18 and 25 years old, she had experienced moderate to severe bi-temporal pulsatile headache for an interval of several months. The duration was about two days; during the headache episodes, she also had nausea, vomiting, phonophobia, photophobia and motion intoler-

ance rather than any neurologic focal symptom. She was diagnosed with migraine without aura. At 29 years old, she experienced her first episode of vertigo. During vertiginous, she felt the surroundings clock-wisely rotating, and had nausea, vomiting, phonophobia and photophobia rather than headache, tinnitus, hearing impairment, ataxia or other neurologic symptom. The vertiginous duration was about half a day, and the afterwards dizziness persisted over the following two days. At 30 years old, she got married. At 32 years old, she presented the same vertigo just a month after her last menstrual day. Her blood pressure and heart rate were measured showing 110/69 mmHg and 73/minute. She was conscious and coherent, with intact cranial nerve function; however, in her gaze straight ahead, a spontaneous rightward purely horizontal beating nystagmus without any torsional component was observed, which was not suppressed by fixation and was also observed in rightward, leftward, superior and inferior gazes. Head thrust test were bilaterally normal. Muscular power was grade 5 (Medical Research Council Scale) in the four limbs. Pinprick, light touch sensations, vibration and joint position sensation were intact. Deep tendon reflexes were all normal for all four limbs. The bilateral Babinski plantar extensor responses were negative. The finger-nose-finger tests and heel-knee-shin tests did not reveal any dysmetria. There was no involuntary movement. Vertigo and spontaneous nystagmus subsided half a day after she was conservatively treated with diphenhydramine (Vena), diphenidol (Cephadol), betahistine (Ecycle), methylcobalamin (Methycool) and prochlorperazine maleate (Novamine). She looked stable, yet felt dizzy over the following two days. Her lipid profile, thyroid function tests, color-coded carotid and trans-cranial Doppler scan, pure tone audiometry and brain magnetic resonance imaging/angiogram were unremarkable. Because her menses was a little out of schedule, she receive pregnancy test, and to our surprise, the test showed positive results.

She was transferred to an obstetric hospital for prenatal examinations and delivery over the following 10 months. Eight months after delivery, the same vertigo recurred. Because of lactation, she did not take any medications, and the vertigo remitted for half a day, and the afterward dizziness continued over the following two days. Over the following four years, she experienced five vertiginous recurrences.

3. Discussion

Up to 60% - 70% of women with preexisting migraine report improvement or cessation of migraine during pregnancy, particularly women with a history of menstrual migraine. If no improvement is seen towards the end of the first trimester, migraine is likely to continue throughout pregnancy and postpartum (5). In addition, a large majority of pregnant women experience hyperemesis gravidarum, defined as vomiting in pregnancy that may lead to weight loss, dehydration, acidosis from starvation, alkalosis from loss of hydrochloric acid in vomitus, and hypokalemia (6, 7). Migraine and hyperemesis gravidarum have a similar predisposition so the sufferer might have the comorbid risk (6). Although our case had a history of migrainous headaches, only migrainous features of photophobia and phonophobia had occurred in each vertiginous attack. Because nausea and vomiting had persisted for only half a day, hyperemesis gravidarum was unlikely.

In a Taiwanese case-series study, vertigo was prone to occur in pregnant women with advanced maternal age (over 34 years old) and primipara, during the third trimester of pregnancy, and 33% of these vertigos were attributable to basilar-type migraine; however, acoustic neuroma was also possible (8). In our patient, during the second vertiginous attack, she experienced nausea, vomiting, phonophobia and photophobia rather than headache or other neurological focal signs. The rightward horizontal beating gaze nystagmus implicated predominance of right vestibular function. Normal head thrust test and normal pure tone audiometry excluded vestibular neuritis, sudden deafness or Ménière's disease; hence, central vertigo was highly suspected. However, brain magnetic resonance imaging/angiography demonstrated unremarkable findings, thus acute infarction, neoplasm or other demyelization changes were excluded. Our patient, had a history of migraines. So far, she has experienced vertiginous attacks eight times. During each vertiginous attack, migrainous features of photophobia and phonophobia occurred at the same time, which matched the diagnostic criteria (i), (ii), (iii)-(b) and (iv). Hence, she was diagnosed with vestibular migraine.

Although vestibular migraine is self-limited, teratogenic risk should be avoided when we treat vertigo in pregnant women. Our patient had been treated with diphenhydramine, diphenidol, betahistine, methylcobalamin and prochlorperazine maleate before becoming aware of her pregnancy. Her pregnancy was indeed an accident. The class of antihistamine diphenhydramine was B, and those of antiemetic prochlorperazine and antivertigo diphenidol were C; yet that of betahistine was not available; fortunately, class D or X drugs were not prescribed for the attack, and no teratogenic effect was found. In fact, most drugs are not licensed for use during pregnancy and breastfeeding and should only be considered if the potential benefits to the woman and fetus outweigh the potential risks. Thus, our patient did not take any medications for the third attack because of lactation.

Pregnancy is expected to occur together with vertigo in females of the childbearing age. Pregnancy test is recommended when menses is out of schedule; even if sterility has been confirmed. Any anti-vertiginous medication with teratogenic risk should be avoided if pregnancy is not completely excluded; antihistamine diphenhydramine (FDA class B) are recommended first for symptomatic control. Antiemetic prochlorperazine

(FDA class C) or antivertiginous diphenidol (FDA class C) was considered only after the FDA class B drug fails to control the symptom. Furthermore, if such patients present migrainous headaches, FDA class B drugs including acetaminophen, diclofenac, ibuprofen, naproxen, meperidine and metoclopramide are recommended, yet class X drugs including ergotamine and dihydroergotamine should be avoided (5).

Footnote

Authors' Contributions: Study supervision, concept and design and critical revision of the manuscript: Jiann-Jy Chen. Acquisition of patient history: Hsin-Feng Chang. Drafting of the manuscript: Dem-Lion Chen.

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