Major depression with catamenial epilepsy versus Major depression with menstrual migraine

Case report by
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Most case reports are on one of six topics:
• positional or quantitative variation of anatomical structures.
• unexpected event in course or treatment of a patient.
• unexpected association between disease or symptoms.
• Findings that shed new light on possible pathogenesis of a disease or an adverse effect.
• Unique or rare features of a disease.
• Unique therapeutic approaches.
History

- **Personal history:** D.N.H is a 35 years old single banker
- **Complaint:** *sudden intermittent* attacks of nausea, dizziness and choking *for 20 years*
- **History of present illness:**
  - Ever *since age of 15* patient experience attacks of pain associated with nausea, dizziness and choking *before menses and around ovulation* where patient is *oriented* to time, place and person but *unreactive* to surroundings. She has abnormal *gut sensations* that is relieved by abnormal body posturing.

- Family sought medical advice in a private clinic and patient was diagnosed as *catamenial Temporal lobe epilepsy*. Her EEG is normal and the brain MRI also. She received *carbamazipine* but was intolerant to sedation and uncompliant.

- She sought medical advise in another private clinic and patient was diagnosed as *menstrual migraine* and received *cycloprogenova* (estradiol 2mg + norgestrel 0.5mg) and her symptoms improved and controlled.
• 6 years later symptoms recurred inspite of her compliance so LUPRON DEPOT (leuprolide acetate for depot suspension 7.5 mg for 1-month) was added and symptoms were controlled again.

• 10 years later (4 years ago), patient was uncompliant as her fiancee broke up with her when he knew her medical condition and drug induced anovulation. Major depressive episode developed also and patient was hardly compliant on different antidepressants prescribed. Her banking career is threatened by frequent absence and the patient expresses suicidal ideas.

• Family history: irrelevant
• Past history: irrelevant

Examination

• Physical: no abnormality
• Neurological: no abnormality
• Psychiatric:
  • Average built female sitting calm and cooperative in her chair with depressed features, apparent psychomotor retardation and telegraphic answers. She is preoccupied by her painful attacks of nausea and choking with good reality testing but expressed death wishes and admitted past suicidal ideas with no specific plans and related it to her depressed affect.
Investigation

- Laboratory: Prolactin = 64.9 (4.7 - 23.3)
- Imaging: MRI brain is free
- Neurophysiology: EEG is free
- Psychometry: MMPI (high neuroticism – depressive state)

Developing diagnosis

- Catamenial temporal lobe epilepsy was her 1\textsuperscript{st} diagnosis but EEG is free and she was uncompliant on carbamazipine.
- Menstrual migraine was her 2\textsuperscript{nd} diagnosis and patient complied well on cycloprogenova then lupron.
- Major depressive episode with catamanial epilepsy versus menstrual migraine was controversial
Treatment response

- Patient responded well on cycloprogenova then lupron.

- Major depressive episode: Patient is hardly compliant on antidepressants and rarely attends outpatient clinic for psychotherapeutic course.
Diagnostic criteria

• **for migraine**:
  A. At least five attacks fulfilling
  B. lasting 4-72 hours
  C. has at least two of the following characteristics:
     - unilateral
     - pulsating
     - severe
     - Avoidance of routine activity
  
  • D. During the headache, at least one of the following [is present]:
    • Nausea
    • Photophobia and phonophobia
    • E. Not attributable to another disorder

• **Menstrually-related migraine**
  A. Attacks, in a menstruating woman, fulfilling the criteria for **migraine**
  B. Attacks that occur exclusively from days -2 to +3 of menstruation in at least two out of three menstrual cycles, and additionally at other times of the menstrual cycle.
  
  • Note: The first day of menstruation is day +1, and the preceding day is day -1; there is no day 0.

• **(G40) Epilepsy**
  – **(G40.0) Localization-related (focal)(partial) idiopathic epilepsy** with seizures of localized onset
  – **(G40.1) Localization-related (focal)(partial) symptomatic epilepsy with simple partial seizures**
  – **(G40.2) Localization-related (focal)(partial) symptomatic epilepsy with complex partial seizures**
  – **(G40.3) Generalized idiopathic epilepsy**
    • Myoclonic seizures in infancy - neonatal convulsions - Childhood absence - seizures on awakening
    • Nonspecific epileptic seizures: atonic - clonic - myoclonic - tonic - tonic-clonic
  – **(G40.4) Other generalized**
    • Epilepsy with: myoclonic absences - myoclonic-astatic seizures
    • Infantile spasms
    • Lennox-Gastaut syndrome
    • Salaam attacks
    • Symptomatic early myoclonic encephalopathy
    • West’s syndrome
  – **(G40.5) Special syndromes: Epilepsia partialis continua**
  – **(G40.6) Grand mal, unspecified (with or without petit mal)**
  – **(G40.7) Petit mal, unspecified, without grand mal seizures**
  – **(G40.8) Other epilepsy undetermined as to whether they are focal or generalized**
  – **(G40.9) Epilepsy, unspecified**

• **(G41) Status epilepticus**
  – **(G41.0) Grand mal**
  – **(G41.1) Petit mal**
  – **(G41.2) Complex partial**
  – **(G41.8) Other** unspecified
• **catamenial epilepsy** is the occurrence of at least 75% of seizures each month in the 10-day time frame, which included the 4 days preceding menstruation and the 6 days after its onset (*Duncan et al, 2005*)

• Herzog’s 1997 proposed Perimenstrual (C1), Periovulatory (C2), and Luteal (C3) patterns upon serum estradiol:progesterone ratio:
  - Perimenstrual “C1” (-3 to 3 of menstruation) is associated with a twofold increase in seizures and the estradiol:progesterone ratio is highest explained by withdrawal of the protective effects of progesterone.
  - Periovulatory “C2” (days 10 to -13) is associated with a twofold increase in seizures and a surge of estrogen before ovulation without a corresponding progesterone surge of protection.
  - Luteal “C3” (days 10 to 3) is associated with a twofold increase in seizure, these women have abnormally low progesterone levels during the Luteal phase.

A case of cerebral endometriosis causing catamenial epilepsy was reported (*Ichida et al, 1993*)
A relationship between epilepsy and migraine has long been postulated, but the nature of this interaction is still debated.

- Fourteen (14%) percent ($n=412$) of adult patients with seizures were identified with a diagnosis of migraine.
- We also found a direct relationship between migraine and epilepsy (a migraine-induced epilepsy) in 1.7% (seven patients) of the patients with seizures. The seizure began during or shortly after the migraine in all of the cases and preceded the headache.
- Three of four patients (75%) who were refractory to management with antiepileptic drugs using either mono or combination therapy improved seizure control with combination antimigraine and antiepileptic drugs.

(Velioglu et al, 2002)

relationship between migraine and depression

- Individuals who have migraines have a higher chance of experiencing major depressive episodes, researchers from the University of Calgary, Canada, reported in the journal Headache. The authors added that the higher risk is there the other way round - that those with major depressive episodes are also at a higher risk of having migraines.

Lead author, Geeta Modgill MsC, says that those who suffer from either migraines or clinical depression should become knowledgeable regarding the signs and symptoms of the other, i.e. migraine sufferers should know about depressive symptoms, and those suffering from major depressive episodes should know about migraine symptoms.

(Modgill, 2011)
It is estimated that 20-30% of patients with epilepsy have psychiatric disturbances.

58% of these patients have a history of depressive episodes,

32% have agoraphobia without panic or other anxiety disorder, and

13% have psychoses (8% of temporal lobe epilepsy)  
(Algreeshah et al, 2013)

<table>
<thead>
<tr>
<th>Psychiatric Disorder</th>
<th>Controls</th>
<th>Patients With Epilepsy</th>
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</thead>
<tbody>
<tr>
<td>Major depressive disorder</td>
<td>10.7%</td>
<td>17.4%</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>11.2%</td>
<td>22.8%</td>
</tr>
<tr>
<td>Mood/anxiety disorder</td>
<td>19.6%</td>
<td>34.2%</td>
</tr>
<tr>
<td>Suicidal Ideation</td>
<td>13.3%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Others</td>
<td>20.7%</td>
<td>35.5%</td>
</tr>
</tbody>
</table>

Thank you 😊