Characteristics of psychogenic nonepileptic events among veterans with posttraumatic stress disorder: An association of semiology with the nature of trauma.

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Background
- Psychogenic nonepileptic events (PNEE) are episodes of altered motor, sensory, and mental function that are not associated with abnormal electrical discharges in the brain.
- The clinical features of PNEE can vary among different patients and a firm diagnosis can only be made by Video-EEG monitoring.
- Various psychiatric disorders can contribute to PNEE, such as conversion disorders, dissociative disorders, depression, and anxiety disorders including posttraumatic stress disorder (PTSD).
- There is limited data regarding the association of PTSD, or the nature of trauma leading up to PTD, with any particular PNEE phenomenology.
- We hypothesize that among PTSD patients with PNEE, the nature of the traumatic experience has an effect on the clinical manifestations of PNEE. Our study aims to examine whether PTSD and its subtypes, combat-related versus non-combated-related, may be preferentially associated with distinctive PNEE semiology.

Methods
- We reviewed the medical records of patients admitted to the epilepsy monitoring unit (EMU) of the Michael E. DeBakey VA Medical Center from January 1, 2000 to April 14, 2009.

Results

<table>
<thead>
<tr>
<th>Demographics</th>
<th>PNEE with PTSD (n=6)</th>
<th>PNEE without PTSD (n=36)</th>
<th>Non-combined (n=42)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>31 (6.3)</td>
<td>32 (5.7)</td>
<td>37 (5.8)</td>
<td>0.12</td>
</tr>
<tr>
<td>Gender</td>
<td>M/F</td>
<td>M/F</td>
<td>M/F</td>
<td>1.00</td>
</tr>
<tr>
<td>History of PTSD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autism</td>
<td>3 (50%)</td>
<td>12 (33%)</td>
<td>15 (36%)</td>
<td>0.02</td>
</tr>
<tr>
<td>Depression</td>
<td>3 (50%)</td>
<td>12 (33%)</td>
<td>15 (36%)</td>
<td>0.02</td>
</tr>
<tr>
<td>Substance abuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AED use</td>
<td>2 (33%)</td>
<td>13 (36%)</td>
<td>15 (36%)</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Discussion

- PNEE subjects with combat-related PTSD showed significant predilection for hypo-motor PNEE as their most predominant event type.
- All 12 subjects with combat-related PTSD were male. However, when we examined the effect of gender on PNEE characteristics among the noncombat-related PTSD (5 males, 7 females) and the non-PTSD group (27 males, 13 females), we did not uncover any significant association of gender with any particular PNEE semiology (p=0.072 and p=0.511, respectively).
- Our combat-related PTSD subgroup consisted primarily of combat-exposed Vietnam veterans, and the mean age for this subgroup was expectedly older than the non-combat-related PTSD subgroup. When we examined the non-PTSD group by comparing the mean age with PNEE semiology, we found no significant association (p=0.607).

Another observation is that the duration of symptoms before definitive PNEE diagnosis was on average 3 times longer in the combat-related PTSD subjects compared to non-combat-related PTSD. This may in part be contributed by the significantly lengthier period from PNEE onset to the availability of EEG technology for the combat-related PTSD subgroup. Our VA medical center established V-EEG capability in 1999.

- Another contributing explanation may be that the frequently subclinical CNS symptoms of the combat-related PTSD subjects can be easily overlooked or errantly attributed to other psychological ailments. On the other hand, the higher prevalence of hyper-motor PNEE features in the non-combat-related PTSD subgroup may be due to subjects’ families and doctors to pursue aggressive work-ups.

- The underlying mechanisms to explain the association of combat-related PTSD with predominantly hypo-motor PNEE semiology is less clear.

- We hypothesize that traumatic experiences from combat operations are unique in the following ways: The traumas are the result of direct lethal intent, whereas the primary goal is almost always to inflict fatal injury.

- In some cases, the victim of combat trauma may also be the perpetrator of trauma himself.

- Because combat-related traumatic experiences are so uniquely stressful, we speculate that these subjects’ PNEE “hypo-motor” expressions may represent dissociative states driven by a mutual underlying defense mechanism – to allow for “numbing” or “escape” from a distressful reality marred by traumatic combat experiences.

- On the other hand, the non-combat-related PTSD group represents a wider spectrum of underlying psychodynamics. It is perhaps surprising for this group to also manifest with a wide range of PNEE semiologies, including fulminate “hyper-motor” somatic expressions as the means to release psychosocial distress or fulfill ulcerous subconscious gains.

- Temporal diagnosis of PNEE can be especially relevant to veterans with combat-related PTSD, whose PNEE manifestations may be subtle, easily overlooked, or misdiagnosed. Early recognition of PNEE is also highly important as longer duration of undiagnosed PNEE has been known to be associated with poorer outcome.