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ETIOPATHOGENETIC DETERMINANTS AND PSYCHOPATHOLOGICAL AND NEUROLOGICAL CHARACTERISTICS OF TANK SHELLING SYNDROME

Danilevska Natalia Volodymyrivna
PhD, Candidate of Medical Sciences, Assistant Professor
ORCID: https://orcid.org/0000-0002-7854-9007
Department of Psychiatry, Psychotherapy and Medical Psychology
Zaporizhzhia State Medical and Pharmaceutical University, Ukraine

Introduction. Combat operations, especially of a total, full-scale nature, are the cause of the development of specific pathological conditions that have almost no etiological representation in peaceful, non-war times.

According to medico-historical analysis, for the first time in modern and contemporary history, a mental disorder specific to warfare was described in 1871 among soldiers of the American Civil War and was designated as Da Costa's syndrome, also known as effort syndrome or soldier's heart syndrome. It developed under the combined influence of combat-related stress and physical exertion and was characterized by somatoform cardiovascular symptoms in the absence of any objective cardiac pathology [3, 4, 13].

The World War I was marked by the identification of a psychopathological condition specific to that conflict, termed gas neurosis or gas hysteria. This mental disorder developed in combatants frightened by the initial invention and deployment of chemical warfare agents in gaseous form, the use of which resulted in mass casualties. The somatoform symptoms observed in affected servicemen mimicked the clinical presentation of chemical poisoning, thereby substantially complicating diagnosis and reducing military effectiveness [6, 7, 9, 10, 18].

World War II was the cause of the development of War Sailor Syndrome. This pathological condition was first described in sailors of the Norwegian merchant fleet who found themselves in a combat zone and experienced constant fear of death and anxiety while sailing and faced misunderstanding of their psychotraumatic experience by their fellow citizens, which ultimately resulted in specific morphological changes in the brain [1, 16].

The Gulf War was marked by the emergence of a specific condition termed Gulf War Illness. This chronic multisystem disorder developed in combatants and is believed to have resulted from exposure to a combination of region-specific factors, including pyrethroid insecticides, depleted uranium from armor-piercing munitions, smoke from oil fires, chemical warfare countermeasure agents, vaccines, and severe psychological stress. Clinically, it manifests as a spectrum of neurocognitive, autonomic, musculoskeletal, and immune symptoms [2, 8, 12, 15].

The Vietnam War enabled researchers to focus attention on and brought wider recognition to a condition termed Post-Vietnam Syndrome, now known as post-traumatic stress disorder. A defining feature of this disorder is veterans' experience of a pathognomonic phenomenon – flashbacks, conceptualized as a form of involuntary sensory reconstruction of memories that are not integrated into autobiographical memory, occurring in response to triggering stimuli [11, 14, 17].

During the full-scale Russo-Ukrainian war, unprovokedly initiated by the russian federation against Ukraine in 2022, a condition referred to as Tank Shelling Syndrome was observed. This condition constitutes a neuropsychological stress response resulting from exposure to direct tank shelling, including acoustic shock, blast overpressure, vibrational loading, and an acute, life-threatening threat associated with being within the effective blast radius of high-explosive tank-fired munitions [5].

The aim of the present study was to investigate the psychopathological and neurological characteristics of Tank Shelling Syndrome and to elucidate its etiopathogenetic factors.

Materials and methods. We examined 40 Ukrainian combatants who were engaged in the defense against occupying Russian forces during the unprovoked full-scale war of aggression launched by the russian federation against Ukraine, and who sustained blast-related injuries. The first research group (RG-1) included 12 combatants who sustained blast injuries as a result of tank shelling. The second research group (RG-2) comprised 18 combatants who sustained blast injuries following the detonation of an FPV drone. The third research group (RG-3) consisted of 10 combatants who sustained blast injuries resulting from the explosion of a guided aerial bomb.

Results. In 10 combatants from RG-1, we identified a specific constellation of obligate symptoms, namely large-muscle tics, predominantly involving the shoulder and shoulder girdle muscles, fine generalized tremor, and logoclonia. All of these combatants sustained blast-related injuries while positioned inside a trench at a distance of several meters from the explosion of a tank shell.

The remaining 2 individuals from RG-1 were located at a distance greater than 10 meters from the tank shell explosion in an open area at the time of injury and did not exhibit the aforementioned manifestations.

Within RG-2, 7 individuals exhibited isolated fine tremor, predominantly affecting the fingers, 2 individuals demonstrated logoclonia accompanied by generalized tremor, and 1 combatant presented with logoclonia without tremor. No cases of large-muscle tics were observed in this group.

In RG-3, 3 combatants demonstrated a combination of facial muscle tics and generalized tremor, whereas the remaining individuals exhibited fine tremor only.

Conclusions. The obtained data allow us to conclude that a person being located in a confined space at the moment of a tank shell explosion is at increased risk of developing a specific condition termed Tank Shelling Syndrome, which comprises the following symptom triad: large-muscle tics, tremor, and logoclonia.

In contrast, other types of explosive exposure, including FPV drone detonation and guided aerial bomb explosion, are not associated with a specific pattern of clinical manifestations.

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НЕОНАТАЛЬНИЙ СЕПСИС: СУЧАСНА ДІАГНОСТИКА ТА ЛІКУВАННЯ

Гаврилов Анатолій Вікторович
к.мед.н., доцент
Здоровець Анастасія Олександрівна
здобувачка вищої освіти 5 курсу
Олійник Дарія Іллівна
здобувачка вищої освіти 5 курсу
Кафедра інфекційних хвороб, дитячих інфекційних хвороб та фтизіатрії
Харківський національний медичний університет, Україна

Неонатальний сепсис – це один з найнебезпечніших станів новонароджених. Пошук сучасних методів діагностики та лікування є дуже важливим для підвищення рівня виживання дітей. Через швидкий розвиток медичних технологій та наукових досліджень, все частіше з’являються нові можливості для покращення стану пацієнтів.