



POST-TRAUMATIC STRESS DISORDER IN ORTHOPEDIC TRAUMA PATIENTS

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ABSTRACT

Orthopedic trauma patients show a higher prevalence of post-traumatic stress disorder (PTSD) when compared to the general public. Studies have shown that between 20-50% of trauma survivors with musculoskeletal injuries will suffer from PTSD. Emotional distress can present immediately after the traumatic experience or there may be delayed onset, and pretraumatic, peritraumatic, and posttraumatic risk factors have been identified as contributing to the development of PTSD. Therapist-delivered trauma-focused psychological therapy has been successful for treating PTSD, and early identification after trauma is important for initiating the treatment in order to improve outcome and limit disability. With their role as the first care providers to orthopedic trauma survivors, orthopedic surgeons can assist with this process by identifying at-risk patients and those who may be exhibiting symptoms of PTSD, and referring them to appropriate mental healthcare providers.

KEYWORDS: PTSD, trauma, orthopedics, disorder, stress, musculoskeletal

INTRODUCTION

Orthopedic trauma is a severe injury to the musculoskeletal system that can be life-threatening and traumatic for the patient, as well as being a major cause of disability. Trauma can occur from accidents of blunt or crushing force, falls, military combat, sports injuries, natural disasters, and violent crime, amongst others. The physical damage that is incurred during orthopedic trauma can be life-changing, limit mobility and recovery, and can be a long and demanding process (1). Additionally, these injuries are often sudden and difficult for the patient to experience and cope with on an emotional level. In fact, more than half of trauma survivors experience psychological distress after being treated for their injuries, and some will go on to struggle for years and even decades (2).

Post-traumatic stress disorder (PTSD) occurs in people who have experienced or witnessed traumatic or life-threatening events and is a common psychiatric condition that affects orthopedic trauma patients after injury. In the past, PTSD was mainly attributed to veterans of war, who had returned from combat with “shell shock”. The disorder was primarily associated with war until 1980, when it became a formal diagnostic entity (3,4). Now PTSD is a well-defined condition and one of the most commonly diagnosed mental health disorders. The American Psychiatric Association defines PTSD as a disturbance, regardless of its trigger, that “causes clinically significant distress or impairment in the individual’s social interactions, capacity to work or other important areas of functioning” (4). The Diagnostic and Statistical Manual 5th edition (DSM5) lists behavioral symptoms as: re-experiencing, avoidance, negative cognitions and

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mood, and arousal (4). These encompass the possible symptoms that can occur in survivors, including flashbacks, recurrent dreams and thoughts, intrusive memories, hypersensitivity and hypervigilance, feelings of guilt, blame, and sadness, withdrawal from activities and social interests, insomnia, or self-destructive behavior.

PTSD is diagnosed after a month of experiencing symptoms following the distressful experience and is a serious mental health disorder that can greatly affect quality of life.

This review will discuss the association of PTSD in orthopedic trauma patients and the implications for treatment and orthopedic surgeons.

Prevalence and Assessment

PTSD has a greater prevalence amongst orthopedic trauma patients in comparison to the general public, affecting between a fifth to half of survivors with musculoskeletal injuries (2,5-11). One particular study focusing on orthopedic trauma survivors showed that half of the 580 respondents showed symptoms for PTSD (10). In another interesting review of studies for skeleton and pelvis injuries, it was shown that more than 25% of survivors had PTSD symptoms after acute orthopedic trauma (12). Furthermore, Starr et al. suggested that the phrase “The emotional problems caused by the injury have been more difficult than the physical problems,” may be useful for signaling PTSD in orthopedics (10).

Symptoms of PTSD may appear soon after injury, but often do not present immediately. A diagnosis can be made after one month of recurring symptoms, but those symptoms can persist or develop months or years after the trauma, with one study showing significant numbers of PTSD patients continuing or starting to experience symptoms at 12 months after injury (9).

PTSD is assessed by screening instruments and structured clinical interviews, with the latter being more successful in assessment and for treatment purposes as well (13). Screening should be established at important intervals, during the acute care phase, and at 3 months after the time of injury, a critical time indicator for long-term symptoms (14). A detailed history and mental status examination is important for determining the nature of the patient’s PTSD.

Risk Factors

Not everyone who experiences a traumatic event will go on to develop PTSD, and some risks factors are useful for predicting patients who may be susceptible (15). The origins of PTSD can be diverse, with pretraumatic, peritraumatic, and posttraumatic factors involved (16).

Patients who have injuries sustained by high-energy mechanisms can be at greater risk of developing PTSD (17). Other indicators include low post-trauma cortisol levels (18), a history of prior trauma and PTSD (19), smoking (20), level of social support, and the perceptions of threat to life (21). The female gender has been shown to have worse outcomes of PTSD after trauma (22). In addition, younger age has been correlated with a higher risk for PTSD (21,23,24).

Pain is not only physical, but emotional as well, and emotional distress can have many negative health consequences and can be a factor for developing PTSD. It has been seen in studies of vehicle accident patients, where pain was linked with PTSD morbidity (25) and where it was shown that reduced pain-levels could lead to reduced PTSD symptoms (26). Another study showed that PTSD can be predicted by pain intensity at the time of discharge from hospital, and pain can provoke and worsen symptoms when it is felt and associated with the traumatic experience (27).

Another factor is the memory extent of the traumatic event (28), as well as the patient’s reaction during the event. Dissociation and emotional numbness are some reactions that fall under the label of peritraumatic dissociation, which can predict PTSD (19), although some studies have shown conflicting results (29).

It was also shown that level of severity and type of orthopedic injury can play a role in developing PTSD, and the need for more physical care in hospital may be linked with the need for greater mental health care (9).

Additionally, there may be a correlation between the nature of the traumatic experience and rates of PTSD. Studies have shown that victims who had experienced violent crime and accidents where pedestrians had been hit by motor vehicles are at higher risk for PTSD afterwards (17).

Finally, a patient’s psychological history can show warnings, as pre-existing psychiatric disorders, such as depression or anxiety, are a risk for developing PTSD and disability (30,31).

Treatment and Management

Treatment options for PTSD are available in the form of therapy and behavioral and pharmacological treatments. Pharmacotherapeutics have limited success, as they are used in PTSD to treat symptoms and not the underlying pathophysiology of the condition, which must be addressed (32).

An effective treatment that is considered the leading choice for PTSD patients is therapist-delivered trauma-focused psychological therapy. Single session interventions were commonly used in the past for preventing mental health

conditions after trauma but were shown to have little effect in preventing PTSD, indicating that multiple sessions are necessary. However, this option is not always accessible or feasible for all trauma survivors, as there may be a lack of qualified therapists, the cost may be a problem, and transportation and time off work are limiting factors.

Trauma-based cognitive behavioral therapy has been shown to be effective in treatment (33,34). Eye movement desensitization and reprocessing, a therapist-guided psychotherapy treatment involving recall of the traumatic experience with controlled movement of the eyes, has had successful results (35,36).

Prolonged exposure therapy, which confronts fear stimuli and reconstructs memories associated with it, and cognitive processing therapy are strongly recommended treatments for PTSD (37).

For short-term PTSD recovery some options include holistic approaches, pastoral care, coping skills, mindfulness, peer visitation, and educational resources (2). Social support can be a valuable tool for long-term recovery, and support groups are available to unite survivors who have experienced similar trauma (2,38).

Following a traumatic injury, early identification of emotional distress and mental health disorders is vital for initiating treatment, reducing long-term symptoms, and improving outcome (39). Orthopedic trauma patients should be screened for mental health problems during their time of care in hospital (40), and routine follow-up should be provided at determined intervals, such as 1- and 3-months post-discharge. Early detection of problems can be identified with better screening methods, such as the Psychosocial Screening Instrument for Physical Trauma Patients (PSIT), developed by Karabatzakis et al (41).

In addition, educational information for patients about PTSD may be included at discharge with recommendations for recognizing symptoms and proceeding with follow-up (9,14).

The Role of the Orthopedic Surgeon

Raising awareness of PTSD within the orthopedic community is an important step in limiting the effects of PTSD for trauma survivors. Early identification of risk factors is crucial for prevention and treatment.

The role of the orthopedic surgeon is to treat the physical symptoms of the musculoskeletal injury and restore function, not to treat the affective disorders that may accompany such injury. However, orthopedic surgeons are at the front-line in treating trauma survivors at the beginning of a potentially long physical and emotional recovery process, the critical timeframe where early identification and diagnosis of PTSD can be greatly beneficial. Identifying psychological distress early is advantageous in determining outcome.

For this reason, educational training concerning PTSD should be provided to orthopedic surgeons. Knowledge of risk-profiles can help surgeons identify the warning signs for PTSD, and subsequently refer patients to appropriate professionals to assist them with treatment. Orthopedic surgeons can also pay attention to patients who are slow in recovery, especially those continuing to experience pain after healing, who may be dealing with psychological problems that are negatively affecting their recovery (42).

CONCLUSIONS

PTSD is a common psychological disorder that accompanies orthopedic trauma patients. It has physical, social, and psychological consequences that can greatly affect the quality of life for the patient. PTSD does not necessarily occur immediately after injury; it can have a delayed onset and present months to years after trauma. Early identification of risk factors and warning signs and screening at discharge, one-month post-discharge, and preferably at determined intervals afterward, can help initiate treatment and recovery. Educational training programs should be initiated for orthopedic surgeons, the first care providers for orthopedic trauma survivors, to aid the early detection process and treatment course for PTSD.

Conflict of interest

The authors declare that they have no conflict of interest.

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