



Acute stress disorder and post-traumatic stress disorder following traumatic amputation

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Traumatic amputations are important causes of acute stress disorder and post-traumatic stress disorder. In this study, we aimed to find out the occurrence rate of symptoms of acute and post-traumatic stress disorder after traumatic amputations and according to this, to assess the psychiatric status of the patients in the postoperative period.

Twenty-two patients with traumatic limb amputation who were treated in our institution were retrospectively evaluated. During the early post-traumatic period, the patients were observed to determine whether they needed any psychiatric supportive treatment. During the follow-up period, after the sixth month from the trauma, the patients were referred to the psychiatry department and they were evaluated to determine whether they needed any psychiatric supportive treatment, by clinical psychiatric examination and use of the 'post-traumatic stress disorder scale' (Clinician Administered Post traumatic Scale, or CAPS).

Twenty-one (95.5%) of 22 patients were male, one (4.5%) female. Mean age of the patients was 40.8 years (range : 15 to 69). During the early post-traumatic period, 8 (36.3%) of these patients consulted the psychiatry clinic following the orthopaedists' observations. Five (%22.7) of these patients needed psychiatric supportive treatment for acute stress disorder. After the 6th month (6 months to 5 years), 17 (77.2%) had chronic and delayed post-traumatic stress disorder and needed psychiatric supportive treatment.

Patients who have sustained a traumatic amputation may need psychiatric supportive treatment in the late period after the trauma. As we orthopaedic surgeons

treat these patients surgically, we should be aware of their psychiatric status.

Keywords : traumatic amputation ; post-traumatic stress disorder.

INTRODUCTION

Limb amputation is the irrevocable loss of an extremity at any level by trauma or surgery. Common conditions that lead to limb amputation include benign and malignant bone and soft tissue tumours, uncontrolled infections, peripheral vascular diseases and traumatic injuries (12). The only

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absolute indication for amputation is irreversible ischaemia in a diseased or traumatized limb. Amputations can be surgically planned (for vascular or tumoral conditions) or non-planned (traumatic) operations. Trauma is the leading indication for amputation in younger patients. Limb loss due to a traumatic injury is sudden and emotionally devastating. These patients are often otherwise healthy and productive, and such injuries may have profound effect on their lives (8). The resulting disability makes life challenging in a world where physical ability is the 'norm' (6). Traumatic amputations limit the patient's daily living and occupation and it has a deep impact on his/her psychiatric status. Loss of a limb causes physically, inability and emotionally, stress to the patient.

During the acute period, within 4 weeks after the trauma, acute stress disorder can be diagnosed and it persists for at least 2 days and up to 4 weeks. During the postoperative period, in the first month after the symptoms have started, if the event still affects and worsens the patients' psychiatric status, a condition named "Acute traumatic stress disorder" can be diagnosed. Acute traumatic stress is caused by an individual's subjective experience of an extreme traumatic event which can lead to extreme stress that inhibits a person's ability to cope. Post-traumatic stress disorder (PTSD) is a psychiatric disorder that can emerge after an individual has been exposed to an event involving threatened or actual serious injury to himself or others that causes a response of fear, helplessness, or horror (3). The prevalence of post-traumatic stress symptoms after the experience of amputation is not well established. After a traumatic amputation, what is the frequency of post-traumatic stress disorder? Is the stress related with the traumatic event affecting daily life? Or is the loss of an extremity affecting daily life and is this causing the stress?

In this study, we aimed to find out the prevalence of symptoms of acute and post-traumatic stress disorder after traumatic amputations and we undertook an observational study based primarily on a questionnaire that was used to assess the clinical and social status of post-traumatic patients during the postoperative period.

PATIENTS AND METHODS

Between April 2007 and June 2008, 22 patients who underwent a traumatic amputation were retrospectively evaluated. During the hospitalization period, the patients were observed for symptoms of acute and posttraumatic stress disorder. In the postoperative period, according to the orthopaedists' observation, the patients were observed to find out whether they needed any psychiatric supportive treatment. If there was any symptom suggesting acute traumatic stress disorder, a consultation with the psychiatry department was organized. According to the results of the psychiatry consultation, treatment was begun for this disorder.

During the follow-up period, after the 6th month following the trauma, when patients were seen at the orthopedics outpatient clinic, they were referred to the psychiatry department. They were evaluated to determine whether they needed any psychiatric treatment by clinical psychiatric examination and using the post-traumatic stress disorder (PTSD) rating scale. For this evaluation we used the "Clinician Administered Posttraumatic stress disorder Scale" (CAPS) (2). For the diagnosis of PTSD, symptoms must go on for more than one month and this situation must affect the patients' social and professional career. The CAPS is a 30-item structured interview that can be used to make a current (past month) or lifetime diagnosis of PTSD or to assess symptoms over the past week. Questions target the impact of symptoms on social and occupational functioning, improvement in symptoms since a previous CAPS administration, overall response validity, overall PTSD severity, and frequency and intensity of five associated symptoms, rated on a scale from 0 to 4. The most frequently used scoring rule is to count a symptom as present if it has a frequency of 1 or more and an intensity of 2 or more. If the sum is 3 or more, that means the symptom is present.

RESULTS

We retrospectively evaluated 22 patients (21 male, 1 female), mean age 40.8 years (range 15 to 69). The aetiology of the traumatic amputations was a work-related injury in 11 patients, a traffic accidents in 6, a crush injury in 2, a gunshot wound in 2 and a burn injury in 1 case. All the amputations were single extremity, isolated, traumatic amputations affecting an upper extremity in 11 cases, and a lower extremity in 11 cases. Fifteen of these

extremities were mangled extremities which needed to be surgically amputated and 7 of the extremities were already amputated when they arrived to our emergency room.

In the early post-traumatic period, 8 (36.3%) of the patients with a traumatic amputation needed a consultation with the psychiatry department (according to the clinicians' observation). Five of these patients (22.7%) were found to need psychiatric treatment for acute stress disorder. During the follow-up period, after the 6th month (6 months to 5 years), 17 (77.2%) of the patients were diagnosed with PTSD (chronic and late period), 5 were regarded as normal.

DISCUSSION

Amputation is one of the oldest surgical procedures known ; it has been performed for therapeutic reasons, as a result of traumatic injuries and also for punishment (5). The frequency of post-traumatic stress disorder is parallel with the stressors in society (11). Such stressors challenge the individuals' ability to maintain emotional well-being and may engender maladaptive reactions leading to poor psychosocial adjustment. However, there is considerable variation in the psychosocial functioning of individuals with amputations. Many individuals function well, but a notable subgroup experience clinically significant psychological or social problems (4).

Planned surgical amputations resulting from chronic illness do not frequently lead to PTSD symptoms. Amputation resulting from accidental injury may lead to a higher prevalence of PTSD, in part because of the emotional stress surrounding the accident (3). Psychiatric morbidity after amputation has largely focused on depressive symptoms. Depression following amputation can result from an adjustment reaction to the surgery and to sudden disability ; it typically resolves with supportive treatment, involvement in rehabilitation and short-term use (several months) of antidepressants (1). A major difficulty with assessing the prevalence of major depressive disorder is that amputation very often adversely affects the individual's ability to engage in his or her previous activities. A previously

bed-bound person who sustains an amputation is likely to experience amputation differently from an elite athlete who requires an amputation ; amputation can be experienced as an absolute loss or as a challenge. The ability to cope with an amputation will be affected by pain, level of disability, adequacy of cosmesis, cultural issues, presence of social supports, the reactions of caregivers and other loved ones, and a patient's preamputation coping style (9). Cosmetic appearance appears to play as great a role in psychological sequelae of amputation as does the return of physical function. In patients with digital amputations, regardless of the level of function recovered, those with cosmetic disfigurement are more likely to have PTSD (7). Medical management of fatigue, pain, and cosmesis of the stump can further alleviate these difficulties during the rehabilitation process (1).

Research on individuals undergoing traumatic injury indicates that those participants with a memory of the event are significantly more likely to develop PTSD. The aetiology of amputation, demographic variables, such as age, health status and social support, time since amputation affect the symptoms of PTSD. It is unclear whether the PTSD was due to emotional trauma surrounding the accident that was the cause of amputation or to the experience of losing a part of one's body. Time since amputation is significantly and negatively associated with intrusion and anxiety, and positively associated with adjustment to limitation. Shorter time elapsed since amputation is associated with greater post-trauma psychological distress and anxiety symptoms, whereas longer time since amputation is associated with more favorable adjustment to limitation. Previous research has also brought support to the suggestion that psychosocial adaptation to amputation occurs over time. Age is significantly and negatively associated with adjustment to limitation, hence, younger age is associated with less favorable adjustment to limitation (4).

Even if no psychiatric supportive treatment is needed in the early postoperative period, the need for supportive treatment may increase in the late postoperative period. In our series, while 5 of the patients needed psychiatric support in the early postoperative period, 17 needed it in the late post-

operative period. Understanding the psychiatric and emotional sequelae of amputation could greatly improve the nature and extent of psychological intervention surrounding the amputation and its aftermath.

Traumatic amputees appear to experience serious long-term physical and psychological effects that impact on health and quality of life (5). The results of this observational investigation could be used to identify the physiologic and psychological risk factors that may lead to development of post-traumatic stress disorder in patients with a traumatic amputation.

Recovery from traumatic amputation needs to be comprehensive and coordinated, and requires addressing the individual's physical, psychological, economic and social needs within the context of family, community, and the socio-cultural environment in which they live (6). Difficulties in the surgical management and immobility of the patient also correlated significantly with high values on the PTSD scale (10).

Despite the relatively small number of patients available, this study clearly demonstrated a high occurrence of post-traumatic stress disorder after traumatic amputations.

CONCLUSIONS

Clinicians should be aware of the possibility of post-traumatic stress disorder in individuals who have experienced traumatic amputations. The psychiatric status of the patients should be observed in the early and late period following the trauma. Future researches should focus on post-traumatic ability and disability of the patients to cope, and supportive psychiatric treatment should not be neglected.

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