

Traumatic Brain Injury (TBI) and Concentrated EMDR: A case study

Travmatik Beyin Hasarı ve Konsantre EMDR: Olgu sunumu

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SUMMARY

It has been highlighted that comorbidity of Traumatic Brain Injury (TBI) and PTSD leads a more complicated treatment process. Hence, it might be useful and practical to provide more trauma-focused therapy methods such as eye movement desensitization and reprocessing (EMDR) therapy. This article illustrates a clinical case by describing the positive outcome of the concentrated EMDR therapy with a treatment frequency increased more than one session in a week of a 25 year old woman with TBI and PTSD. EMDR treatment has been provided for ten days and seven sessions in total for 90 min in each session. The results of the treatment have been measured with CAPS, SUD and VOC score. Results show the effectiveness of concentrated EMDR even after the 16 month follow up.

Keywords: Traumatic Brain Injury (TBI), Eye Movement Desensitization and Reprocessing (EMDR), Concentrated EMDR

ÖZET

Travmatik beyin hasarı (TBH) ve Travma Sonrası Stres Bozukluğu (TSSB) komorbiditesinin tedavi sürecini daha karmaşık hale getirdiği bilinmektedir. Bu nedenle, Göz Hareketleriyle Duyarsızlaştırma ve Yeniden İşleme (EMDR) terapisi gibi daha travma odaklı terapi yöntemlerinin uygulanması sağlamak faydalı ve pratik olabilir. Bu olgu sunumu, TBİ'si ve TSSB'si olan 25 yaşındaki bir kadın hastada, tedavi sıklığı haftada birden fazla seanslar halinde olacak şekilde, konsantre EMDR uygulamasının olumlu sonuçlarını gösteren bir klinik vakayı göstermektedir. EMDR tedavisi her seans 90 dakika olmak üzere toplamda 10 gün ve 7 seans uygulanmıştır. Tedavinin sonuçları CAPS, SUD and VoC puanları ile ölçülmüştür. Sonuçlar, 16 ay sonra yapılan takip çalışması sonuçları da dahil olmak üzere, konsantre EMDR'nin etkinliğini göstermektedir.

Anahtar Kelimeler: Travmatik Beyin Hasarı (TBH), Göz Hareketleriyle Duyarsızlaştırma ve Yeniden İşleme (EMDR), Konsantre EMDR

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INTRODUCTION

TBI- PTSD

Traumatic Brain Injury (TBI) is described as damage to brain tissue by an external force (1). This kind of brain injury is being diagnosed clinically by imaging (primarily computed tomography (CT) or magnetic resonance imaging (MRI)). Injuries are commonly categorized as closed or open; while the open injuries commonly involve bullets or sharp objects which penetrate the scalp, closed injuries occur when the head is struck or strike an object and shaken violently (1). In terms of TBI severity, the injuries could be mild, moderate, or severe and mild TBI comprises 80% of total TBI diagnosis (2). TBI may present with some somatic, cognitive, and behavioral symptoms. For instance, the symptoms might include headaches, confusion, blurred vision, lack of concentration, memory corruptions, sleep disturbances, mood changes (3). Recent research suggests that the majority of TBI cases resolve within 6 to 9 months (4), however, some of them develop post-concussive physical and cognitive symptoms as mentioned above.

After the physical trauma, although the majority of the symptoms can be associated with TBI, yet, it might also be associated with psychiatric disorders such as Post Traumatic Stress Disorder (PTSD). PTSD occurs following life-threatening experiences such as war, sexual assault, homicide, or natural disasters (5). People with PTSD experience intense distress with symptoms such as hypervigilance, sleep disturbance, psychological arousal, and flashbacks. PTSD and TBI have some overlapping symptoms. Symptoms of people with TBI and PTSD comorbidity and only those with PTSD were examined; comorbid group experience less intrusive PTSD symptoms (2).

Furthermore, studies clarified that the presence of PTSD could aggravate cognitive distortions in mild TBI patients (6,7). Recent studies highlighted that PTSD prevalence is higher among patients with moderate and severe forms of head injuries (8). In addition to that, a systematic review reported that rates of PTSD among Iraq war veterans are between 1.4% to 31% (9).

There are efficient psychological and pharmacological treatments for PTSD established upon important evidence-based studies such as Cognitive-Behavioural Psychotherapies and Prolonged Exposure Therapy –which is a sub-protocol of CBT-, Stress Inoculation Therapy, and Cognitive Therapy. These are the most common treatment options for PTSD. CBT requires weekly prescribed follow up activities that the patient needs to observe. In other words, CBT therapy sessions can only be applied once a week (10).

In this case, EMDR could be a promising treatment approach. EMDR is an 8 phased psychological treatment that was founded by Francine Shapiro in the early '80s. According to Shapiro when a traumatic event happens, it is established with emotional, cognitive, and perceptual symptoms and the cognitive symptoms reveal themselves as negative cognitions (11). EMDR starts with history taking and targets to reveal unprocessed traumatic memories in Phases 1 and 2. Once the clinician assesses the traumatic events, client preparedness, and stability, the clinician progress to Phase 3 to 7, during the session, the patient is focusing the stressful or traumatic memory as well as related the negative cognition and engage in a dual-attention simulation of sets of eye movement, tones or taps (12). All the cognitive, emotional, and sensory elements are worked until the patient's irrational negative cognition changes, and the disturbance level goes to 0. Phase 8 is conducted at the beginning of each session to evaluate the efficiency of the treatment. The efficiency of EMDR and its underlying mechanism is subject to debate for some time; however recent studies have proven that eye movement contributes to EMDR's effectiveness (13). Moreover, in comparison with other trauma-focused therapy techniques, EMDR provides a swifter recovery process and a lesser drop-out rate (14,15).

Concentrated EMDR Therapy

Traditionally, most psychological therapies are applied once every week. A patient generally requires a week to complete their daily homework as in CBT or exposure therapy. Thus, it seems that it is necessary to spare between sessions. However,

as EMDR therapy does not use daily homework, it is also not necessary to engage in sessions every week. In the literature, the application of EMDR therapy more than three times a week is defined as “concentrated EMDR” (16). If a patient experiences acute PTSD or severe PTSD symptoms, in this case, EMDR therapy can be applied multiple times a week. There is recent research by Wesson and Gould, in which it was reported the successful outcome of consecutive EMDR sessions (3 times a week) on a soldier with an acute stress reaction. The results were maintained after 18 months of follow-up (17).

The Current Study

The current study investigates the effect of concentrated EMDR on an individual with a diagnosis of TBI and PTSD.

CASE

Case Presentation

Miss F., 25 years old single female doctor who had a stable childhood with no psychiatric history. During her daily life, she is working as an anesthesiologist, and she has a hectic daily routine.

A detailed history taking revealed that Miss F.’s father had a sudden death by the time she was ten years old.

Miss F. explained that she couldn’t get to know her father enough also, she underlined she feels sad about the absence of her father. Moreover, she added she had financial difficulties in the later periods of her life. The patient didn’t determine any evident psychiatric disease in her family history. In addition, there was no identified premorbid psychopathology.

She had got complicated grief as she cannot pay a visit to the cemetery and avoiding to talk about this subject.

Eight months before the treatment, Miss. F had a

car accident. His boyfriend was driving the car in the accident. Based on hearings from her relatives, she called for help from people who were in other vehicles. Arrived in a hospital, her friend passed away, and Miss F. had stayed in an intensive care unit for two days. Miss F. was diagnosed with Subarachnoid hemorrhage, and she used antiepileptic drugs for a couple of weeks. She did not remember the first month after the accident. Three months later since the incident, she applied herself to the psychiatry clinic with complaints of restlessness, pain in the chest in the mornings, and waking up very early. Her complaints were ongoing almost every day and decreasing the quality of her life by a significant amount. Thus, she has been prescribed Mirtazapine (30 mg) for two months and Fluoxetine (20 mg) for two weeks. When she applied to the hospital for seeking psychiatric help for the first time, she was diagnosed with Post Traumatic Stress Disorder (PTSD). Nevertheless, it was challenging to have a day off from her employment for treatment.

Moreover, she only had got 15 days of annual leave. When she applied to our clinic, she needed an adequate and short-time treatment approach. Consequently, Miss F. was referred to our clinic for EMDR therapy, and based on her mental health examination; she has diagnosed with PTSD comorbid Prolonged Grief according to DSM-5 criteria.

*Presenting Problems:*She consulted the clinic for complaints of attention problems, difficulty in remembering critical details of a task, sleep disturbances, inability to encoding new information. Her emotional functioning was also unstable with severe anxiety symptoms (shaking and paraesthesia) when she sees similar cases regarding the traffic accident.

She was experiencing impairment in her daily routine. For instance, she was avoiding going to the city where she moved recently, and she was anxious about driving a car.

During the mood control examination, her self-care was insufficient; her mood and affect were appropriate. She was scared of getting worse as a result of remembering new details about the inci-

dent.

Assessment: The patient was diagnosed with Traumatic Brain Injury as a result of headache, forgetfulness, loss of concentration, memory problems, sleep disturbances, and mood swings, within the framework of somatic, cognitive, and behavioral symptoms, with CT reports in favor of past Subarachnoid hemorrhage, with no neurological sequelae detected in the neurosurgery control. As a result of the psychiatric assessment, related diagnoses were made in line with PostTraumatic Stress Disorder and Prolonged Grief Disorder symptoms.

EMDR Treatment: After the first interview with Miss F., EMDR therapy was prescribed for her. Pre-session and post-session scales were applied to her and supervision were obtained.

Miss F. was coming from another city, so she had a limited time to get psychotherapy treatment. Because of this reason, concentrated EMDR therapy was advised of her. Before the therapies being applied, the informing consent form was signed by the patient.

Measures: Miss F. completed questionnaires at pre-treatment, post-treatment and follow-up. These included Clinician-Administered PTSD Scale (CAPS), Dissociative Experiences Scale (DES), Impact of Events Scale-Revised Form (IES-R), Peri-traumatic Dissociative Experiences Questionnaire- Self Report (PDEQ-SR), Beck Anxiety Inventory (BAI). Beck Depression Inventory (BDI).

Case conceptualization: The clinician used the AIP model to conceptualize the patient's symptoms. EMDR session has started with the memory of the first disturbing incident as there was also unprocessed and prolonged grief of his late father and it followed with the latest accident.

Treatment Overview

Session 1 : The first session of the EMDR was con-

stituted regarding the topic of the death of her father. The most painful memory was the scene where people were taking the coffin of her father out of her home. Concerning this target memory, Miss F.'s negative cognition (NC) was 'I am weak' and Positive Cognition (PC) was 'I am strong' with a Validity of Cognition Scale (Vo C; Shapiro, 1989) (11), 2 out of 7, where 1 means "completely false" and 7 means "completely true".

The level of disturbance was measured with the Subjective Unit of Distress (SUD) scale, where 10 is the highest level of disturbance and 0 is no disturbance. Miss F. has rated the disturbance eight before repressing with sadness and feeling a lump in her throat.

During the first session, Miss F. focused on her relationship with her father. She felt prolonged grief for her loss. As Miss F. progressed through the event, the acceptance of his death took the place of the grief, and she reported that she was feeling peace with the thought of being able to visit his grave and talk to him whenever she wants.

Session 2: The following day, Miss F. reported some changes in her symptoms. Desensitization continued three sets more until bringing her SUD score to zero, and she reported that 'I cannot go to that scene. I accept that he is dead and I believe I can go to his grave to talk and that incident does not bother me anymore.' The session closed with repeated visualizations of the event, both with eyes open and closed until no disturbance was reported. The positive cognition was worked on and remained at a VoC of 7.

Session 3 and 4: The second and most disturbing aspect of memory was identified during the assessment which was based on the feeling regarding the traffic accident. In this memory, Miss F. choose 'I am weak' as an NC and 'I am strong' as a PC with a VoC of 3. She was feeling sadness, and SUD was 6. Nevertheless, this was worthy to note that the very initial SUD of this incident in the assessment phase was 2 and it augmented to 6 after working with the first disturbing memory.

During the session, she had a hard time focusing on

the target memory, and she named it as a rejection of thinking about it with a massive level of guilt. She occasionally reported a negative response from her decedent friend’s mother. The mother blamed her for her son’s death. As the EMDR sets went on, the feelings about guilt and weakness shifted back to acceptance, and there was an increase in empathy. Toward the end of the session, she came up with the statement “The mother is looking for someone to blame too to deal with her grief. This blame is understandable, and it does not make me guilty or a weak one”.

She reported a SUDs level of 4 and commented that the picture has faded. The 4th session ended with a SUDs level of 0 with an adaptive cognition of “It is over now.” The body scan did not reveal further stress.

Session 5: Upon completion of working on the most disturbing memories, the clinician and the patient re-evaluated the initial complaints. The patient rated two of the disturbing memory at a SUD score of 0 and VOC of 7. Further, this session addressed the NC “I cannot trust people”. The memory linked with this NC was facial expression of her friend’s mother who blamed her for the death of Miss F’s friend. This particular trigger processed rather fast. NC was transformed into PC of “I can trust people.” She added her satisfaction by saying “I am ready to go back to work in peace.”

Follow-up

Psychiatric investigation were conducted once in every six months besides the follow-up sessions. After 2-month post treatment, Miss F. reported that the effect of the treatment had been maintained and she was feeling better. Additionally, she mentioned that her relationship with her dog was better and she was feeling more confident. There was no medication treatment needed and no additional complaint was identified. The process of remission was determined.

14 month follow up: Miss F. was contacted for follow-up assessment, and she reported again that everything was great and mentioned that she is satisfied with the EMDR treatment.

Results

Table 1 reports the results at pre-treatment, post-treatment and 2 follow-up assessments. The baseline results, Miss F., scored quite high scores on every self-measure scale except on BAI. In the first assessment, Miss F. was tending to repress her ongoing stress to function in her daily life entirely which was also consistent with her initial SUD score on an incident about the traffic accident. It is believed that this avoidance and suppression was the reason BAI was not significantly high. In the follow-up, attention problems and avoidant behaviors of Miss F. were disappeared; she started to drive, and she declared she started to feel happy after a long time.

DISCUSSION

Table 1 : Pre to Post Treatment and Follow-up Scores on Measures

Scales	Pre-Treatment	Post-Treatment	2 Month Follow-up	16 Month Follow-up
DES	5	-	0,3	-
IES-R	12	6	1	-
CAPS	63	19	11	22
BDI	17	12	1	1
BAI	3	1	3	2

Note: Improvement indicated by a reduction in scores.

Miss F.’s memories about her father’s death have a significant role in her current mental strain. Apart from the fear and the loss of her boyfriend in a car accident, Miss F. also experienced guiltiness and rejection imposed by her boyfriend’s mum. Those irrational materials and memories were locked in the memory network for a long time.

In the case of Miss F., the first traumatic memory of his father’s death was targeted with EMDR and followed by the memory of the traffic accident with her boyfriend. The Subjective Unit of Distress (SUD) of traumatic events was successfully decreased to 0, which means no disturbance at all, with seven sessions within ten days.

This case provides some evidence that the concentrated EMDR could benefit TBI patient who has prolonged grief and PTSD. In focusing first to this traumatic event with negative cognitions, emotions, and physical sensations, EMDR was successful in desensitizing the impact of the adverse event in a brief time.

It should also be noted that there are factors that may have contributed to this positive outcome. After the accident, she had regularly seen a psychiatrist and used medication. Regardless of this treatment, she continued to have problems in concentration and relationships. Miss F. was still working in a hospital/school where she met with her boyfriend. Jones suggested that continuing to work in such an environment could trigger stored memories of the traumatic event (18). After the accident, Miss. F continued to work at the hospital, where they worked together with her boyfriend, for three more months. Three months later from the accident she changed her workplace; despite that, her symptoms did not get better. Psychiatric consultations and medications were not sufficient. Her complaints regressed after concentrated EMDR application.

This case suggests that the use of concentrated EMDR could be an good option for decreasing emotion and cognitive distress in a rapid way. The treatment lasted seven sessions ten days and marked significant personal and interpersonal changes. The improvement continued in follow-ups.

This case is important in two respects.

1) Concentrated EMDR application can be effective like classical EMDR and it gives results in a short time. 2) Prolonged Grief and Post Traumatic Stress Disorder may accompany in diseases with

biological features such as TBI. These symptoms complicate the clinical situation. It seems that early testing of psychological treatments, even in biological situations, may be important. As in this case, effective treatment of comorbid diagnoses of Prolonged Grief and Post Traumatic Stress Disorder can make dramatic changes.

There are some limitations to this study. This is a case study design which assesses the outcome of an individual. Although the results are significant, it requires randomized controlled studies to generalize the results. The second limitation is that lack of administration of the neurocognitive tests in order to compare the results before and after. While EMDR has shown its' effectiveness in numerous studies, more controlled study designs are needed for concentrated EMDR.

In conclusion, this study suggests that EMDR could be efficient for a person suffering from TBI. Moreover, it could be even useful to be applied in a concentrated way. It is suggested that future researches could compare the effectiveness of concentrated EMDR and CBT.

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