

Psychotic symptoms in post traumatic stress disorder: a case illustration and literature review

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ABSTRACT

Posttraumatic stress disorder (PTSD) is a condition being increasingly recognized. The diagnosis is based on the re-experiencing of a traumatic event. There have been reports of the presence of psychotic symptoms in some cases of PTSD. This may represent increased severity or a different diagnostic clinical entity. It has also been suggested that psychotic symptoms may be over-represented in the Hispanic population. In this manuscript, we describe a case to illustrate this relationship and we review the current literature on the relationship of psychotic symptoms among PTSD patients. The implications regarding diagnosis, treatment, and prognosis are discussed.

Keywords:

Psychosis; PTSD; Trauma; Hallucinations; Delusions; Posttraumatic stress disorder.

INTRODUCTION

Posttraumatic stress disorder (PTSD) is a psychiatric illness formally recognized with the publication of the third edition of the Diagnostic and Statistical Manual of the American Psychiatric Association in 1980.¹ Re-experiencing of traumatic events as recurrent unpleasant images, nightmares, and intrusive feelings is a core characteristic of PTSD.² Most PTSD research has occurred among veteran populations exposed to traumatic images and events during combat and the presence of psychotic symptoms has been described among some combat veterans with chronic PTSD. It has been suggested that this presentation may either reflect a distinct subtype of the disorder or indicate an increased severity of PTSD symptoms.³ David et al described 53 combat-related PTSD patients, 40% of whom were said to have "psychotic" symptoms of which 95% were auditory hallucinations.⁴ The prevalence of auditory hallucinations seems greater among Hispanic populations suffering from PTSD.² The identification of psychotic symptoms in PTSD may have implications regarding diagnosis, treatment, and prognosis. This manuscript reviews the literature regarding the occurrence of psychotic symptoms in PTSD. We also describe a case of an Hispanic gentleman with non-combat related PTSD which, to

the best of our knowledge is the first report of psychotic symptoms in a non-veteran adult with PTSD.

CASE ILLUSTRATION

A 37 year-old gentleman was admitted to a state university hospital inpatient setting after alerting his wife of his suicidal thoughts and intent to slit his throat with a kitchen knife. At the time of initial presentation, he felt the "weight of the whole world was on him" and stated that he had "always felt this way" since he was a young boy. He recounted that there had never been a time when he had not wanted to kill himself. He reported hearing a man's voice, which he believed could be that of his father. The voices were telling him that "he was good for nothing." He was admitted to the inpatient unit for further evaluation and management. He described initial and terminal insomnia with nightmares of previous physical and sexual abuse by his father. He admitted to having panic attacks and graphic flashbacks to the episodes of abuse. During these flashbacks the patient reported "I could smell his sweat." He would often avoid situations that he believed would initiate a flashback. He avoided watching violent television programs, as these would precipitate a flashback.

On further questioning, he admitted that he had experienced auditory and visual hallucinations since the age of seven. At nine years of age, he recalled seeing a transparent muscular white male, two feet tall, running in circles around his bed and laughing at him. He felt protected by this man. Since the age of fourteen, he recalls seeing transparent, black, male figures, two feet tall, circling his bed, tormenting and kicking him, saying "you

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are no good for nothing" and "it is time to end it." He also sees silver-gray fanged snakes that rattle while preparing to attack him. He reports delusions of reference involving people on television and people in public talking about him.

There had been three previous psychiatric hospitalizations between 1993 and 1997. In 1993, he was diagnosed with a "psychotic disorder not otherwise specified" and was treated with risperidone.

As a teenager, he abused alcohol, cannabis, cocaine, heroin, and amphetamines. However, he had not used any illicit substances in the ten years preceding this hospitalization. There was a medical history significant for asthma, for which he uses an albuterol inhaler. He had been married for ten years with three school aged children. A family history of drug and alcohol use was elicited but not for any other psychiatric disorders. Previously he had been employed as a janitor, but was currently receiving social security disability as a result of the current psychiatric illness. Physical examination was normal, except for faint scars on his left forearm from a past suicide attempt in 1997. A urine drug screen on admission was negative.

Mental status examination on admission revealed a cooperative Hispanic gentleman with poor grooming, little eye contact during the interview, and psychomotor retardation. His speech was of slow rate and decreased volume. He described his mood as depressed. His affect was noted to be flat. His thought process was logical and coherent, without tangential or circumstantial thinking. He experienced auditory hallucinations as described above. His thought content was significant for suicidal ideation without intent or plan. His insight and judgement into his current illness were limited.

Our diagnostic impression on admission was that this patient was suffering from PTSD. We did consider the diagnosis of childhood onset of schizophrenia or schizoaffective disorder because of the early onset of psychosis, with a delusion of molestation persisting into adulthood. We however felt this to be unlikely, given the collateral information from the family that the described sexual and physical abuse did occur. We considered a major depressive illness, especially as he has had episodes of depressed mood with suicide attempts in the past. The patient was screened but did not meet the criteria for a major depressive illness. We also considered schizophrenia and schizoaffective disorder. The patient met criteria for PTSD according to the fourth edition of the Diagnostic and Statistical Manual (DSM IV), but did not meet the criteria for any other major psychiatric disorder.⁵

He was started on risperidone 2 mg twice daily, sertraline 100mg daily, and trazodone 50mg at bedtime for insomnia. In addition, he received individual and group supportive psychotherapy similar to other patients in the unit. His PTSD symptoms were noted to be worse at night as he would dread the return of the transparent black figures. He had some episodes of worsening anxiety at night, in which he felt that the walls were closing in on him. This resolved with oral lorazepam 1mg as needed. On the above treatment regime, he improved symptomatically. He was discharged home on the above medications with outpatient follow-up at a local mental health clinic, where he continued to receive individual and group psychotherapy to enable him to work through the trauma. The content of his therapy in the out patient clinic involved insight oriented psychotherapy to enable the patient to overcome his disorder as well as to enable him to control his symptoms.

DISCUSSION

In describing the criteria for posttraumatic stress disorder, DSM-IV does not indicate that psychotic symptoms may be a component of PTSD.⁵ It also does not recognize the proposed diagnostic category of complex posttraumatic stress disorder suggested by Herman.⁶ Under recognition of this entity may be the result of the under-reporting of psychotic symptoms by patients with PTSD, the misdiagnosis of psychotic symptoms, or the less bizarre presentation of psychosis with PTSD. Prior to 1980, individuals with PTSD were frequently diagnosed with schizophrenia. Although, auditory and visual hallucinations may occur within the content of flashbacks, patients with PTSD frequently report the presence of psychotic symptoms when they are not having flashbacks.⁷

We do recognize that there are cultural differences regarding the significance and interpretation of psychotic symptoms. What is psychotic in one's culture can be normal behavior in another culture. However, we believe this patient was experiencing psychotic symptoms since we examined his symptoms within a cultural context during family meetings with relatives.

It is important to assess co-morbidity in many patients with PTSD. PTSD and schizophrenia may co-occur in the same individual, and the amount of traumatic exposure experienced by chronically psychotic patients can be extremely high. In addition, PTSD may co-occur with borderline personality and major affective disorders. As we did in this patient, careful evaluation using the DSM criteria may help in making an accurate diagnosis. It has been suggested that about 40% of patients with PTSD may have psychotic symptoms.⁴ Such psychotic symptoms may occur in those with a more severe form of PTSD. There have been several reports of psychotic symptoms occurring in patients with PTSD.^{8,9} (Table I) However, these reports have generally been in patients with combat related PTSD. The patient described in this manuscript had severe PTSD symptoms resulting from domestic sexual and physical abuse. He also demonstrated psychotic symptoms such as delusions, along with auditory and visual hallucinations. These psychotic symptoms occurred outside the context of flashbacks. It can be argued that his psychotic symptoms were secondary to a depressive illness, since there is significant co-morbidity between depression and PTSD. However, the fact that this patient continued to have psychotic symptoms during those periods when he was not clinically depressed argues against this. It can also be argued that his psychotic symptoms were the result of a concurrent psychotic illness, such as, schizophrenia or schizoaffective disorder. However, again, after careful consideration and review of diagnostic criteria in DSM-IV, the patient was felt to meet the criteria for PTSD and no other psychiatric illness.⁵

There are three possible relationships between PTSD and psychotic symptoms. First, psychotic symptoms as a complication of PTSD may indicate increased severity. Second, PTSD with psychotic symptoms may represent a different diagnostic clinical entity. Finally, the two conditions may co-exist in one individual representing two different diagnoses. Psychotic symptoms in PTSD are usually described as auditory hallucinations and persecutory delusions. Preliminary findings suggest that patients with PTSD and psychotic symptoms may have a higher dopamine beta hydroxylase (DBH) level when compared with individuals without psychotic symptoms.¹⁰ This

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Table 1

Study	N/Study Type	Findings	Suggestions
1. Hamner et al. (3) J Nerv Ment Dis 2000	a. N=80 (PTSD=40, Schiz.=40) b. prospective study	1. Pt. with schizophrenia have more intense delusions and conceptual disorganizations 2. +/- psychosis sxs. Present in PTSD	1. Clinicians should inquire about psychotic sxs. in pts. with PTSD.
2. Hamner et al. (8) Biol Psychiatry 1999	a. N=45 (PTSD-P=22) b. prospective study	1. Pts. with more severe psychosis ratings on PANSS and CAPS scales are likely to have more severe PTSD disease burden if psychotic features are present.	1. Occurrence of psychotic features in PTSD are not necessarily due to 1 ^o psychotic disorder, suggesting that this (PTSD-P) may be a distinct subtype. 2. Prospective studies needed to determine if antipsychotic tx. will help PTSD pts with psychotic sxs.
3. Hamner et al. (10) Psychiatry Research 1998	a. N=41 (PTSD N=19) b. prospective	1. Dopamine B hydroxylase (DBH) was significantly higher in pats with PTSD with psychotic features when compared with non-psychotic PTSD pts and controls	1. Plasma DBH activity may differentiate psychotic and non-psychotic subtypes of PTSD.
4. Ivezic et al. (19) Croat Medicine 2000	a. N=41 (33/51 had comorbid dx) b. prospective	1. Psychotic sxs found in 8/41 PTSD pts. None of the 8 had a 1 ^o personality or psychotic disorder.	1. Severe and prolonged combat trauma may be followed by co-occurrence of PTSD and psychotic sxs.
5. Wenzel et al. (21) Psychopathology 1999	a. N=2 b. Case study/series	1. Report of presence of Capgras Syndrome in 2 survivors of torture with dx of PTSD.	1. Interaction of personal life experience and psychiatric dx proposed as factors resulting in changing perception and affect.
6. Pinto and Gregory (20) Am J Psych 1995	a. N=1 b. Case report	1. Presence of PTSD with psychotic sxs (paranoid delusions)	1. Hypervigilance is part of a spectrum that includes persecutory ideation, paranoid delusions and delusions of reference. 2. Variant of PTSD should be recognized.
7. Butler et al (7) Biol Psychiatry 1996	a. N=38 b. prospective	1. Depression, anxiety and agitation co-exist with PTSD. 2. Psychotic sxs can occur in PTSD in cases that present with + psychotic sxs, especially where there is no evidence of mania or formal thought disorder.	1. Additional research needed to explore the presence of + psychotic sxs in PTSD pts.
8. Waldfoegel and Mueser (9) Am J Psych 1988	a. N=1 b. Case report	1. Report of presence of delusions and hallucinations in a non-combat veteran with PTSD after a sexual assault. The pts' psychotic sxs did not respond to tx with neuroleptic.	1. PTSD should be ruled out before making a dx of schizophrenia.
9. Mueser and Butler (16) Am J Psych 1987	a. N=36 (5 with auditory hallucinations, 31 without auditory hallucinations) b. prospective	1. Veterans who reported auditory hallucinations had higher combat exposure and more intense PTSD sxs than other veterans. 2. PTSD pts with auditory hallucinations tend to be more refractory to tx 3. Higher incidence of auditory hallucinations in Hispanic pts 4. Veterans with auditory hallucinations had significantly higher severity of combat exposure.	1. Pts with PTSD with auditory hallucinations appear to be a distinct subtype.
10. David et al. (4) J Clin Psych 1999	a. N=53 b. prospective	1. 40% of PTSD pts reported psychotic sxs; of these 95% reported auditory hallucinations. 2. Psychotic sxs were more common in minority (Black, Hispanic) than in Caucasian veterans.	1. Psychotic sxs may be a feature of combat-related PTSD and may be related to major depressive disorder.
11. Kaufman et al. (15)	a. N=1 b. Case report	1. Case study of 5 year old child revealed trauma related hallucinations which resolved with psychotherapy as pt as resistant to neuroleptic tx.	1. Psychobiological & psychopharmacological studies are needed to help refine tx guidelines for traumatized children with PTSD and psychotic sxs.
12. Wilcox J et al (2) Comp Psychiatry 1991	a. N=59 b. prospective	1. Veterans with auditory hallucinations were much more likely to be of Hispanic ethnicity than of any other ethnicity. 2. Duration of combat exposure and hx of POW were not related to occurrence of auditory hallucinations.	1. Ethnic variation may be related to confounding variables such as poverty or disadvantaged social status.

Key: PTSD-P Post-traumatic stress disorder with psychotic features
 + positive
 - negative
 sxs symptoms
 pts patients
 tx treatment
 dx diagnosis
 hx history
 POW prisoner of war

suggests that PTSD with psychotic symptoms may represent a different clinical entity. It is quite possible that this change in DBH may represent a biological marker, reflecting increased susceptibility to developing psychotic symptoms in the context of trauma. DBH catalyzes the conversion of norepinephrine to dopamine, leading to excessive dopamine levels and perhaps an increased propensity to developing psychotic symptoms. Noradrenergic dysfunction has been implicated in PTSD, and exaggerated norepinephrine responses have been described secondary to physical stressors, psychological stressors, and pharmacological stressors.^{11,12,13,14} This finding of increased DBH although not investigated in our patient may provide the basis for future studies at our institution and others.

It has been postulated that psychotic symptoms (especially auditory hallucinations), may be a sequela of prolonged and severe trauma.⁸ It is possible that prolonged intense traumatic stimuli along with a physiologically based heightened arousability may account for this phenomena. Although earlier studies regarding psychotic symptoms in PTSD were focused on combat veterans, we hypothesize that this patient's prolonged trauma coupled with what may be a cultural sensitivity rendered him more susceptible to experiencing psychotic symptoms. Although, it is not entirely clear why there is an increased susceptibility to psychotic symptoms among the Hispanic population, it could be argued that a cultural acceptance of voices or visions may play a role in their development. Alternatively, some cultural groups are more willing than others to experience and endorse visions and voices. Furthermore, it is quite possible that people who feel free to acknowledge unusual experiences may be more integrated into rather than alienated from their groups. Further study is needed in this area to clarify which factors contribute to the development of psychotic symptoms among Hispanics with PTSD.^{2,4}

Identifying and classifying psychotic symptoms in PTSD may be significant for treatment purposes. For example, if psychotic symptoms occur secondary to PTSD, it may be possible that treating the PTSD with behavioral techniques such as flooding could alleviate the psychotic symptoms. This has been the observation in some studies.^{15,16} Perhaps the treatment model as proposed by Herman would alleviate the psychotic symptoms over time.⁶ In this treatment the individual is made to feel safe so that the trauma can be reconstructed and then the individual can reconnect with the world. Waldfoegel et al describes a case of PTSD with psychotic symptoms where the psychotic symptoms did not resolve with neuroleptics but did respond to behavioral therapy (implosion).⁹ In this case, a specific form of psychotherapy was found effective. If this is indeed the case, the patient can be spared the risk of potential side effects of extra-pyramidal symptoms and tardive dyskinesia. However, if the presence of psychotic symptoms indicates a more severe form of PTSD the use of neuroleptics may be justified to shorten the course of illness and reduce morbidity.^{17,18}

CONCLUSION

The current case is the first non-veteran adult patient presenting with non-combat related PTSD with psychotic symptoms described. Symptoms such as hypervigilance, intrusive thoughts, flashbacks, delusions, and hallucinations may share a similar biological basis. More studies are needed to address

the complex relationship between PTSD and psychotic symptoms, which may have implications regarding diagnosis, treatment, and prognosis.

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