A strange case of Comorbidity in a 60-year-old Portuguese war veteran: War Post Traumatic Stress Disorder, Early Fronto-Temporal Cerebral Atrophy, and Strong Neuropsychological Symptomatology. A Neuropsychological Review

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Resumen
La perturbación de estrés pos-traumático (PEPT) es una perturbación psiquiátrica que deriva de eventos traumáticos. Aunque la literatura y los informes clínicos de PEPT sean conocidos hace ya algunos siglos, solamente en la década de 1980 esta perturbación fue reconocida por la Asociación Americana de Psiquiatría como una categoría diagnóstica del Diagnostic and Statistical Manual – III. El presente artículo describe el caso de un enfermo con PEPT, con sintomatología inicial de demencia fronto-temporal así como otras señales neuropsicológicas y neuropsiquiátricas. De acuerdo con la evaluación neuropsicológica realizada por nuestro equipo fue posible identificar una gran cantidad de alteraciones del humor y de las dimensiones de la personalidad, así como alteraciones en la orientación, memoria, atención, concentración y en las funciones controladas por los lóbulos pre-frontales. Este artículo no solo sugiere la relevancia de realizar una evaluación neuropsicológica profundizada, sino también la necesidad de integrar todos los déficits presentados por el enfermo con las evidencias de la literatura.

Palabras Clave: Perturbación de Estrés Pos-Traumático de Guerra, Demencia Fronto-Temporal, Atrofia Cerebral, Comorbilidad, Valoración Neuropsicológica.

Abstract
The Post-Traumatic Stress Disorder is a psychiatric disorder that derives from traumatic events. Although the literature and clinical reports of PTSD is known along centuries, only in 1980 was recognized by the American Psychiatric Association as a diagnostic category of the Diagnostic and Statistical Manual – III. The present article reports the case study of a man with Post-Traumatic Stress Disorder, initial signs of fronto-temporal dementia and other neuropsychological and neuropsychiatric symptomatology. Decurrent of the neuropsychological evaluation was possible to detect a variety of alterations in the humour and personalistic sphere, as well as deficits in orientation, memory, attention, concentration and also in the functions regulated by pre-frontal cortex. This study suggests not only the importance of a deep neuropsychological evaluation, as the necessity to integrate the deficits showed by the patient with the evidence from literature.

Key Words: War Post-Traumatic Stress Disorder, Fronto-Temporal Dementia, Cerebral Atrophy, Comorbidity, Neuropsychological Evaluation.

Introduction
Turnbull1 states “Trauma is as old as man.” He reminds us that in the Iliad, “Achilles’ reaction to the death of his comrades presaged the traumatised responses of American servicemen in Vietnam who experienced similar tragic losses, while Samuel Pepys’ account of the 1666 Great Fire in London foreshadowed the horror of those caught up in the Harrods bombing. Post-traumatic stress disorder (PTSD) symptoms have been identified in populations as diverse as veterans of the American Civil War and a peasant family trapped by an avalanche in the Italian Alps in 1755, making PTSD – a normal response to abnormal events.” In terms of War PTSD, the main particularities of PTSD, according to Macher1 & Crocq2 and van der Kolk3 were identified around the first half of the 20th century in people who suffered from psychological trauma in the sequence of the two world wars. Generally speaking, these patients were exposed to life-threatening circumstances, causing a syndrome first known as “shell shock,” war neurosis and “combat fatigue.”4 According to Macher & Crocq,2 because of the absence of conscience about the characteristics of this new psychiatric classified pathology, it was only introduced into the 3rd edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM)5 in 1980 (for a state of the art on PTSD history).

Some authors, like Kopelman,7 sustain that PTSD can be verified ultimately in association with head
injury, “being the victim of violent crime, or in major disasters (e.g. the sinking of the Herald of Free Enterprise at Zeebrugge, the King’s Cross oss fire)”. Also, Webb states that PTSD, is a psychiatric disorder that sometimes could derive from traumatic events. The author stress that, when this condition remains untreated, the symptomatology could provoke strong enough, significative, and last longing deficits in the patients' life.

Some authors like Price states that it is not acceptable that the two disorders coexist in the same patient, once “someone who has sustained a brain lesion with loss of consciousness will not be able to re-experience the traumatic event” (p. 101). Nevertheless, according to Caro, Giráldez, Rodrigo & Rionda (2005), an entity known like Post-traumatic brain damage syndrome can be confused with PTSD, once it is very frequent after sustaining cranial-encephalic trauma. Caro et al., sustain that the two disorders presents some characteristics in common, like “loss of memory of some element of the traumatic event, depressive symptoms (anhedonia, restricted affect, pessimistic attitude about the future), sleep alterations, irritability, concentration difficulties and intolerance of loud noises” (p. 101).

Considering the postulated brain related disorders and PTSD, Dimitrov, Elpern-Waxman, Granetz, Phipps, Milne, Logan, et al., and Milner, Petrides & Smith focuses the attention in the role of frontal-temporal brain and neuropsychological disorders on mnesics dysfunction (not only in semantic functions but also in frontal memory processes).

From now on we will describe, discuss and present a review of the literature, parting for a case of a male, 60 years old, ex-combatant in the decolonisation war involving Portugal (metropolis) and his colonies, particular Guiné, in Africa.

Case description
Respective to biographic data of the patient, is married, has 60 years old, 7 years in school and living in the centre littoral in Portugal. He arrive in consultation with strong complaints in the memory sphere, concentration difficulties, inattentive pattern of functioning since 6 years till actuality, with a considerable worsening in the last 2 years. Personality alterations are also reported since 2 years ago. The patient also presents accentuated vertigo (with a progressive course) since 5 years ago, as well as psychiatric complaints typically found in the diagnostic of War Post-Traumatic Stress Disorder, since 1974 (the patient is an excombatant in the decolonisation conflict between Portugal and his colonies; in this case the patient was integrated 27 months in The Portuguese Troops occupying Guiné, in Africa, always under fire in the front of the battle). After the decolonisation era, the patient returned to Portugal and was retired from Military Service, since 1975.

Regarding to a brief evaluation of his cognitive state as well his attitude in the approach of evaluation, the patient presents symptomatology of spatial-temporal disorientation (MMSE = 22, in a subject with 7 years of schoolarity, and mnesic difficulties, particularly verified in interference proactive memory tasks. The patient is moderately collaborative.

Patient Deep Neuropsychological Evaluation
Memory
In the assessment of mnesic functions it’s shown that the global mechanisms in remote and procedural memory are preserved. Nonetheless, the learning capacity assessed by a learning task of 7 (seven) not-related words are clearly poor, with an aleatory pattern of words evocation (Fig. 1). The patient is not able to evoke the words in a stable order along the essays. In the contrary, his evocation of the words is aleatory, having doubts about if or not some words as been already evoked (Fig. 1).

His performance on the Verbal Memory Rey Test corroborates the preview performances, where the random pattern of responses of the memorized words increases, evoking in the maximum 8 words out of 15 (Graphic 1).

The process of retention and recovery (retrieval) of verbal information – words – mediated by an interference process is presented clearly in deficit (Figure 2a). The same standard is verifiable with the repetition and reevocation of simple phrases (Figure 2b).

Its difficulties in memory tasks are also verified in tasks of associative memory of histories repetition, repeating only some parts of information, but in a wrong form face to the text displayed for the appraiser. In the same way, the associative memory of image-words is clearly dysfunctional, saying correctly only 2 words out of 7.

Particularly in tasks of memory of letters and digits in forward and backward are disclosed marked difficulties. In the repetition of items in forward only 4 letters and 5 digits are correctly evoked in a raw,
Regarding to the visual memory, the patient discloses performance poorly satisfactory. In the test Rey Complex Figure, the copy is already sufficiently poorly represented of the point of view of the process programming of copy as well as at the level of visuo-spatial organization. In the phase of memory draw, is only capable to draw the main arches and few details, being this performance suggestive of attentional deficit, prefrontal programming deficits and visual memory (see Figure 3, page 48).

Hence, these difficulties are expressed in memory daily functional deficits. Such mnestic failure are not due to typically cortical-temporal aetiology, being better understood in the scope of a diffuse disturbance, with special damage of the tasks assured for the central executive (pre-frontal cortex), with particular dysfunction of the implied attentional mechanisms in the procedural and work memory. Thus marked difficulties in terms of temporal orientation are related, halopsychic disorientation (relative to the proper one), necessity that relatives modify its normative standards of life. For example, they started “to confirm if the door of the commercial establishment is well closed,” “if the water taps had been closed and if the lights had been shut down.” In other situations, is the proper patient that needs to confirm if its relatives had carried out the presented verifications. An aspect of unquestioned relevance is that since 2 years ago till the present days the patient started to have orientation difficulties when is driving a car (is frequent to wander with the automobile until obtaining to reach its intended destination).

| Patient performance - learning and evocation of not-related 7 words |
|---|---|---|---|---|---|---|---|
| House | Wood | Cat | Night | Table | Needle | Cake |
| ☺ | ☻ | ☻ | ☻ | ☻ | ☻ | ☻ |
| ☺ | ☻ | ☻ | ☻ | ☻ | ☻ | ☻ |
| ☻ | ☻ | ☻ | ☻ | ☻ | ☻ | ☻ |
| ☻ | ☻ | ☻ | ☻ | ☻ | ☻ | ☻ |
| ☻ | ☻ | ☻ | ☻ | ☻ | ☻ | ☻ |

- ☻ - correct  ☻ - incorrect

| Repetition of the following words |
|---|---|---|
| Man | Hat | Door |

| Repetition of the following words |
|---|---|---|
| Light | Stove | Cake |

| Reevocation of the first words |
|---|---|---|
| X | X | X |

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Assessment of Pre-frontal Mechanism
Perseveration in the reproduction of antagonic motor patterns is verified (characterized for the repetition of motor pattern under guided regulation – Go-no-go manual tasks).

In the test of words list generation it’s presented the capacity to generate 6 names of fruits in 60 seconds and 8 words initiated for letter the P. This is clearly an inferior result considered normative levels, where is expected more than 10 words in 60 seconds, being this patter suggestive of bradypenia of pre-frontal aetiology.

His performance in tasks of arithmetical dexterity in backwards subtraction is strongly marked, especially in complex tasks (e.g. 100 less 7 and thus consecutively); in simpler tasks (e.g. 30 less 3) it carries through little errors however still with some difficulty. During the performance of the task, the patient discloses marked cognitive bradypenia translated in bigger time to concretion of the task.

The performance in the clock test allows to verify that the patient not only presents strong difficulties in the rank of the hours numbers in the expected place, as such his performance does not seem to be explained by perseveration, but for one strong attentional deficit, that reflects an impulsive standard of approaching the task, leading to displaced the numbers in a consecutive pattern without taking in consideration the expected spaces between the numbers. Interrupting the task in number 12 when perceives that the numbers had been erroneously displaced (Figure 4).

In the Paced Auditory Serial Addition Test (PASAT), it can be verified that the patient presents relative difficulty in understanding the instructions when presented with written support, however ultimately is able to understanding them. In this test the patient is invited to produce the sums of the last two numbers that the appraiser goes pronouncing. As the patient has to verbalize loudly the result of each addition, this verbalization produces an interference effect on the operations that must be carried out.
As can be verified by the analysis of the figure 5, although the patient is able to understand the instructions and to carry through the task with written support, his performance in situation of evaluation is clearly poor, being capable to evoke correctly only 4 out of 13 presented operations (Figure 5).

Its performance in the Luria Graphical Series (Figure 6) one more time it's indicated an inattent and impulsive pattern in the tasks approaching. Perseveration, rotations and distortions are not verified. However, he almost initiates the task immediately to its exposition. In the middle of the task he verifies the error of omission and realizes the task counting for this moment.

The patient presents diffuse pre-frontal syndrome with affection of the mnesic dimensions and maintenance of poor levels of necessary attention and concentration to daily life functioning. He presents capacity of learning, although being strongly affected by interference mechanisms. Such aspect produces significant damage in the labour performance and daily life social relationship. This pre-frontal dysfunction seems to be supporting the problems at psychiatric level that we will relate ahead.

**Data of Imagenologic Evaluation**
As it can be verified by the study of a recent Computerized Axial Tomography (CAT) (June 2006) the patient presents bilaterally accentuation of the cortical ridges with frontal predominance (see figures 7 - 8).

In the images 9 - 10 it can be verified that the signals of cortical degeneration are evident, with a manifestation not so accented as in the polar frontals regions. The evaluation of the cited images allows perceiving that a process of generalized widening of the cortical ridges is clearly evident parting to inferior cortical parts until the superior cortical layers (temporo-occipito-parietal).

Considering the age of the patient, 60 years, the study of the cortical surfaces allows to claim the hypothesis that this patient is in the beginning of generalized pathological degeneration, with frontal predominance.

![Figure 4. Patient performance in the dock test.](image)
Data of the Evaluation of Psychiatric Sphere
According to proper and the wife, being also our opinion, based on the evaluation, the patient presents a semiologic set of factors that must be taken in consideration.

Since its military demobilization (1974) and subsequent return to Portugal, the patient suffers of:

A. Post-Traumatic symptomatology characterized by: a. permanent state of agitation and hypervigilance: "any small noise" makes him to wake up frightened and in a state of anxiety and considerable fidget, being difficult to come back to sleep. Even in a vigile state, during the day, the same situations of occurrences of intense noises produce an immediate state of typical behaviour of war veterans: he becomes scared, is verified high anxiety, becomes verbal and physically more aggressive than his normative habitual, etc. b. currently, any behaviour of others interpreted for the patient as aggressive generate in himself stormy behaviours, as “to argue with friends,” “to shoot chickens for the soil,” (presently the patient works in a mini-market being the commercialisation of baked chickens one of the main activities), “deals with the customers in an impatient and rude form, almost every day,” “feel strongly irritated with the conductors of other vehicles in an exacerbated way,” “cries out with the people,” etc. c. intermediate insomnias (in the middle of the night), being difficult to come back to sleep, occurring about two times per week. Sometimes, after waking up, is not able to return to the bed and sleep, being waked till morning. Sometimes, as he perceives that will not come back to sleep it rambles for the house or it wakes up the wife starting quarrels without any rational and factual reason.
B. It presents Social Isolation since to some years, with gradual intensification.

C. Had to the related traumatic state, he relates that it started, about 7 years ago, to present a pattern of daily alcohol consumptions (5 to 10 beers, 2 - 3 cups of wine in all the meals, and for times, 3 - 4 times per week, the ingestion of an average dose of Whisky). He still relates that this standard of consumption leads him to commit alcoholic abuses (“especially to reduce the anxiety”) about two times per week, reaching to a state of light to moderate drunkenness (“it is the only form to feel more calm and not annoy...
me with other people nor to scare me with things… with the noises,” “every day I am scarred… therefore the strong noises makes me to remember the explosions of the war”).

D. In what concerns to the personality sphere, disinhibition is still well verified. The patient presents pre-frontal dysfunction with considerable alterations in the field of verbal aggressiveness and difficulty to impulse control (without acting out) as well as reduced capacity of frustration resistance. It must be taken in consideration the cited in the points “A.a” “A.b” and “B.”

E. In the sphere of humour appeared being dysthymic since about two years, anhedonia, bradyphrenia, social isolation and sexual difficulties.

F. In the sphere of anxiety disorders, criteria Generalized Anxiety Disorder, Serious type, are fulfilled. G. He still presents general medical conditions as, visual difficulties, auditory difficulties with alterations of the vestibular-ochlear system, which produces erratic walking and strong impeditive vertigos considering a normative pattern functioning labour abilities.

Integration and Diagnostic Conclusion
The patient presents temporal disorientation, with fast dysfunction of spatial functions, presenting gradual deficit of the mnestic functions with strong socio-labour and familiar deterioration.

Of the point of view of the capacities mediated for the cortical frontal regions the patient discloses performances typical of social disinhibition, difficulties in controlling the impulses and low frustration resistance. He still presents difficulties of memory, programming and attention due the deficit of the mechanisms regulated for the central executive, causing a state of daily disorientation to some levels (temporal, spatial, personal organization, etc). So, cortical damages with marked dysfunction at the level of the frontal lobes is verified, and less accented (but significant) to the level of the parietal, occipital, temporal cortical ridges.

Concernment with War Post-Traumatic Stress Disorder he also presents Psychiatric Pathology, with association, as a result of, or in comorbidity, with significant pathology to the level of Generalized Anxiety, Dysthymic Mood, Antisocial Behaviour, Generalized Aggressiveness, Personality Disorder, Sleep Disorder and significant and continued Abuse of alcoholic substances.

Having in account the age of the patient (60 years), and the picture presented by neuropsychological evaluation (complemented by CAT analysis), is fortified the diagnosis of gradual progressive dementia process of cortical aetiology, specially, Frontal and/or Fronto-Temporal dementia, in his first stages.

So, as the therapeutic plan for this patient, and considering that at this moment he doesn't have any medication support, we consider that he would start, in short time, consultation with a neurologist and then to be submitted for an urgent psychiatric treatment, representing actually a moderate risk for the safety of his proper person or others. The patient continues to be followed by our team of Neuropsychology.

Discussion and Integration of Literature
The interest of this case is related with the fact that, since the beginning of evaluation sessions, we realized that we were in front of a patient with a particular comorbidity. The relationship between PTSD and cerebral damage is well known. Nonetheless, this case looks very particular because of the apparent aetiology of the cerebral damage (degenerative fronto-temporal dementia) and associated neuropsychological and neuropsychiatric symptomatology.

Some of the most studied neural circuits associated with PTSD are hipocampal atrophy17 and syndromatic amigdalar malfunction, frontal-limbic structures abnormalities, 18 hipoperfusion of striatum, bilateral anterior cingulum and right orbito frontal cortex 79 and large cava septi pellucidi.20

We have stated that the patient of this study presented a considerable deficit in the cortical-sub-cortical circuits surrounding the pre-frontal and temporal cortex (apart from the other neuroanatomical regions cited before). Related with this, Shin, Orr, Carson, Rauch, Macklin, Lasko, et al.21 edited a study that could help us to understand the neuroanatomical subjacent circuits. In a case-control study, they tried to evaluate the potential role of the amygdala and medial prefrontal regions in PTSD, given a special attention to the functional relationship of the mentioned circuits. According to the authors, the main objective of the study was “To examine the relationship between the amygdala and medial prefrontal regions during symptom provocation in male combat veterans (MCVs) and female nurse veterans (FNVs) with PTSD.” (p. 168). The sample comprised only Vietnam Veterans: 17 volunteer (10 women
and 7 men), with PTSD (PTSD sample) and 19 (10 women and 9 men) without PTSD (control sample). Utilizing positron emission tomography and study of the cerebral blood flow at the moment of recollection “personal traumatic and neutral events.” The authors concluded that there is a “reciprocal relationship between medial prefrontal cortex and amygdala function in PTSD and opposing associations between activity in these regions and symptom severity consistent with current functional neuroanatomic models of this disorder.” (p. 168).

Summarizing PTSD models of arousal deregulation implicate dysfunction in an inhibitory gating mechanism in the frontal–subcortical system.22,23

When we use the term War PTSD, and considering the alterations since the first scientific approach to the theme24 as well as the first psychoanalytics clinical descriptions,25 we are talking about, according with American Psychiatric Association (2000) in the "Diagnostic and Statistical Manual of Mental Disorders"[4.Ed., Text Revision]5 and “The American Heritage.”26 “A psychological disorder affecting individuals who have experienced or witnessed profoundly traumatic events, such as torture, murder, rape, or wartime combat, characterized by recurrent flashbacks of the traumatic event, nightmares, irritability, anxiety, fatigue, forgetfulness, and social withdrawal.”

Our patient allegedly presents symptomatology of PTSD since his demobilization from the Portuguese army in 1975. So, why this symptomatology keeps present for the last 40 years, and why the same symptomatology suffered a worsening in the last two-three years? In a clinical research with 61 Holocaust survivors, Barak & Szor27 found that, 50 years after the Nazi regime, 91.8% of the survivors presented a strong diagnosis of PTSD. If we don’t consider the special features from Holocaust phenomena, other authors suggest that the incidence of PTSD many years after the major war events present percentages in the order of 12.4%28 to 45%29. Once our patient is Portuguese, the citation of a large study on PTSD occurrence30 is of great importance to percept the frame of the Portuguese reality. It’s estimated that about 800.000 male combatants was exposed to trauma in the colonial Portuguese wars between 1961 and 1975. From those, about 140.000 are estimated as suffering from any kind of chronic psychological problem, and particularly, the authors concluded that the estimation for Portugal for War PTSD to the colonial veterans are 10.9%. It’s clear then that the prevalence of War PTSD is a considerable health issue and the incidence may appear only several years after the traumatic major events.

In particular, our patient appears to be developing a fronto-temporal syndrome, with the possibility to have to be diagnosed in the future as a Fronto-Temporal Dementia. According to Neary, Snowden, Gustafson, Passant, Stuss, Black, et al.31 three clinical syndromes exist that suggest degeneration of frontal-temporal regions, namely, Frontal- Temporal Dementia (FTD), expressed by behaviour disinhibition, impulsiveness, strong alterations in social relationships and executive deficits. Our patient presents the FTD disinhibited type formulated by Caixeta & Nitrini.32 This could be supported by the accepted idea that acute and recurrent stress events can in fact produce neurodegenerative disorders.33,34 The CAT of the patient clearly shows atrophy of frontal poles and disseminated by other regions and structures like the temporal ones. The FTD was first known as Pick’s Dementia.35 It’s characterized by grey and white substance atrophy at the frontal lobes and temporal poles and in some cases could be widespread, affecting parietal regions (as in our patient) and striatum, thalamus, amygdala and hippocampus.36 The patient of our study presents a set of characteristics presented by Allegri, Harris, Serrano & Delaval.37 as golden marks of FTD: a) Principal diagnostic traces: insidious beginning and slow progression, lost of respect by social rules and self care (e.g. hygienic habits), rigidity and lack of mental flexibility, violent and inconvenient behaviours, distractibility, impulsiveness and imper sistance, low insight about himself and other actions and consequences; b) in terms of emotional signs, he presents high level of anxiety and moderate depressive symptoms, as well as anhedonia (emotional indifference, apathy and lack of sympathy and empathy).

The reference of neuropsychological data related with PTSD is not so common as the first relation (PTSD and Brain alterations) although, sufficiently developed. Some classic papers like The Neuropsychology of Anxiety: An Enquiry Into the Functions of the Septohippocampal System,38 presents the well broad known relation between stress and anxiety disorders and neuropsychological malfunction.

Other authors39–42 present a particular interest in the study of traumatic stress (PTSD) and neuropsychology as well as Friedman43 and Doblin44 with the study of neuropsychology and neuropsychopharmacology and PTSD. However, some studies45 present particular neuropsychological deficits in Prisoners of War (POW) in memory, attention, and executive deficits. Considering POW’s of the World War II, Marsella, Friedman & Spain80 and Jacobs & Iacopino,46 suggest deficits of memory and learning, and other problem-solving limitations as well as several cognitive performance deficits. The study of Vietnam Veterans from USA as been one of the particular major area of interest, like the studies
of Vasterling, Duke, Brailey, Constans, Allain & Sutker about processes like attention, learning, memory performances and intellectual resources.

During the process of neuropsychological evaluation and considering our patient, we have taken into consideration some aspects usually recommended in the evaluation of war veterans, such as the possibility of malingering.

Once we understand brain interconnection based on Hebbian Rules, we quote Siegle & Hasselmo that states: “Because runaway synaptic modification has implications for disruptions in memory processes, neuropsychological testing, which focuses on memory performance and has a history of direction based on models of biological processes, is expected to reveal such disturbances” (p. 273).

Horner & Hamner stated that the cognitive performance is equally distributed even considering the variety of possible stressors. Nonetheless, the authors revised the literature and concluded that the War PTSD was the most cited type of sub-category evoked in scientific papers considering the whole field of PTSD. As in our patient, the most evident cognitive deficits postulated by the authors were: memory, particularly involving the immediate verbal and visual information retrieval, and with a lower strength the non-immediate retrieval of information; attention, in verbal and visual modalities; and finally, executive functioning, including problem solving skills.

Sachinvala, von Scotti, McGuire, Fairbanks, Bakst, Mcguire, et al. and Vasterling et al. states that the majority of war veterans are low educated, recur frequently to alcohol or medication and, as our patient, presents an elevated tax of comorbidity. Weinstein, Fucetola & Mollica states that, in addition of all cognitive deficits presented before “A pattern emerged of errors of commission and intrusion, with a tendency toward response disinhibition and intrusions on cognitive tasks that correlated positively with re-experiencing symptoms and negatively with avoidance/numbing symptoms.” (p. 134).

In conclusion, in our opinion we are in front of a patient with a particular dysfunction of the brain fronto-temporal circuits, and related neuropsychological dysfunctions. That could be the support of the evidence that the memory deficits presented by him, is not so related with a semantic syndrome, but with a frontal one. According to this, several authors refers that the executive malfunctions, as prospective memory, abstract thinking, mental flexibility and work memory, have been also related with this kind of population.

In terms of neuropsychiatric symptomatology related with War PTSD, and parting from the example of our patient, it was demonstrated that he shows insufficient functional outcomes in the social life, as well as mood disorders, anxiety problems, alcohol abuse, confusion, detachment, and apprehension. The patient still presents negative cognitive ruminations, inflectional anxiety, anger, suspiciousness, low self-esteem, and less-adaptive personality structures, alexitimia and anhedonia and emotional numbing. Some authors state that this kind of symptomatology appears to be dose-dependent, especially somatic complaints, attentional difficulties, anxiety, and depression. At the same time, this patient seems to try to hide the stigma associated with mental disorder, pushing his family to hide the problem and do not find clinical help. As well as in the majority of patients with PTSD he presents insomnia recurring to the use of alcohol to induce sleep. Finally, as supported by the literature, psychiatric comorbidity is a common theme in these populations, including PTSD and depression, and they “have substantial functional consequences influencing resiliency in the community” (p. 132).

Conclusions
If, in fact, we can conclude that in our patient the comorbidity exists, whether causally related or not, that we should make an effort to integrate the deficits showed with the evidences from literature. The comorbidity with physical conditions in war veterans is well known, but what about the psychiatric and neuropsychological findings in our study?

One of the symptoms most pressing for the dementia diagnosis are deficits of memory that is characterized for difficulties in learning of new information or forgetting other already apprehended. The first type of memory difficulty is the most frequent and in practical terms expresses in losing objects of daily-life use (e.g. keys of house, wallet, small objects, etc.), forget that food are cooking, disorientation in familiar places, among others aspects. The dysfunction of the executive functioning is also frequent and can be due to cortical and subcortical frontal regions. This type of functions are important in the daily life situations and allows the capacity of planning, initiating, sequencing, monitoring and finishing actions and abstractly think on a problem. Our patient strongly presents such difficulties.

In terms of neuropsychological impairments, what where the major particularities evaluated by our team?
A sufficiently usual concept in the scope of the aging constitutes cognitive impairment. This is defined as any alteration of the superior mental capacities, which is manifested usually in an alteration or decrease of the abilities of the individual. It can be reversible or chronic, and focal (restricted to an area) or diffuse (to some levels), or either, to affect only one isolated mental function or in contrary, to affect a set of functions that is related between itself. According to Rudolf, Ponds & Van Boxtel, the cognitive impairment associated with the age is initiated approximately in the 50 years and increases gradually, affecting the functions of memory, attention, speed of cognitive processing, planning and decision-making.

Petersen, Stevens, Ganguli, Tangalos, Cummings & DeKosky states that the detention of initial symptoms of dementia by means of screening tests is pointed, with bases on the results of some studies, insufficient. According to these same authors, the epidemiological studies in the scope of the aging and dementia habitually conclude three groups of citizens: citizens with and without dementia and citizens that do not fit in the category for dementia, although to disclose a cognitive deficit (particularly in the memory), but do not complete all the criteria for the dementia diagnosis. Still according to the authors, other problem is the utilization of screening tests for the detection of Cognitive Impairment, like MMSE, Kokmen Short Test of Mental Status, 7-Minute Screen e Memory Impairment Screen. Petersen, et al., states that these instruments are only truly liable when utilized in samples that already presents high prevalence of mild to moderate cognitive impairment.

In fact, only a profound neuropsychological evaluation of this patient allowed us to verify some subtle deficits (as well as major ones).

Beyond the evaluation contemplating an analysis of the cognitive functions of the patient, an evaluation of the activities of daily life was equally contemplated (basic activities of daily life, instrumental activities and advanced activities of daily life) as well as his socio-familiar situation. We had into consideration the debate about the possible protective factor of pre-morbid intellectual reservoir in the developing of Neuropsychological deficits. Once this is not a clear and free of doubt subject, we could speculate that the low scholarity of our patient could be a factor of increase in the deficits.

Finally, like suggested by various authors, in the process of neuropsychological evaluation we have conjugated information of clinical anamnesis, clinical neurological evaluation, and neuroanatomic examinations (Computerized Axial Tomography). With the utilization of the Portuguese Experimental Version of Luria Nebraska Neuropsychological Battery, we conclude that the patient presents diffuse fronto-temporal syndrome with involvement of the mnesics dimensions and maintenance of accented poor levels of necessary attention and concentration to daily life functioning. He presents capacity of learning, being strongly affected by interference mechanisms. Such aspect produces significant damage in the labour performance and daily life social relationship.

The prefrontal medial cortex seems to mediate the response between the hippocampus and the amygdala acting as a modulator of stimulus reaction. So, the particular pre-frontal dysfunction seems to be supporting the problems at psychiatric level that we have related.

References


