Psychiatric and neuropsychological legal assessment of traumatic brain damage and Law 30/95

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La peritación psiquiátrica y neuropsicológica del daño cerebral traumático y la Ley 30/95

Summary

Medico-legal assessment of people who have suffered injuries in road traffic accidents must use Law 30/95 as a reference frame. Psychiatric and neuropsychological syndromes secondary to traumatic brain injury (TBI) are no exception and pose demanding challenges to physicians and psychologists. This paper analyzes descriptive and nosological difficulties face by psychiatrists and psychologists; their expert contribution includes translation of official diagnostic entities into categories published in the annex of Law 30/95. Our psychopathological repertoire was created in the 19th century and has hardly been revised since. The wide and varied types of neuropsychological impairments encountered in TBI have to be diagnosed within a very narrow range of DSM-IV and ICD-10 categories.

The most common conflicts encountered in the medicolegal arena are revised: the differential diagnosis between dementia and combinations of organic personality disorder with cognitive impairment; differential diagnosis between spontaneous psychiatric illness (bipolar disorder, schizophrenia) and psychiatric syndromes secondary to brain injury (posttraumatic psychosis, organic bipolar disorder); differential diagnosis between concussional syndrome and organic personality disorder, cognitive impairment or organic affective disorder. Specific diagnostic guidelines are suggested for each of these clinical situations.

Key words: Traumatic brain injury. Psychiatric-legal assessment. Law 30/95.

Resumen

La Ley 30/95 es hoy día un obligado marco de referencia en la peritación de las secuelas de los pacientes que han sufrido lesiones en accidentes de tráfico. Los síndromes psiquiátricos y neuropsicológicos secundarios a traumatismos craneoencefálicos no son una excepción y plantean a los profesionales un nuevo reto. El presente artículo analiza las dificultades con las que se enfrentan el psiquiatra y el psicólogo a nivel descriptivo, nosológico y como expertos que contribuyen a la traducción de los diagnósticos propios de la especialidad a categorizaciones publicadas en el baremo anexo a esta ley. Se revisan las limitaciones que impone un lenguaje psicopatológico acuñado en el siglo XIX y apenas revisado desde entonces. En relación a los clasificaciones psiquiátricas dominantes, DSM-IV y CIE-10, llama la atención la pobre representación de categorías que recojan la amplia tipología y severidad de déficit neuropsicológico.

Los conflictos más habituales en la práctica peritadora son revisados: el diagnóstico diferencial entre demencia postraumática y combinaciones de trastorno orgánico de la personalidad y deterioro cognitivo; la diferenciación entre enfermedad psiquiátrica espontánea (esquizofrenia, trastorno bipolar) y síndrome psiquiátrico secundario a lesión cerebral traumática (psicosis postraumática, trastorno bipolar orgánico); el diagnóstico diferencial entre síndrome postconmocional y trastorno orgánico de la personalidad, déficit cognitivo o trastorno afectivo orgánico. Para cada uno de estos conflictos se sugieren criterios que pueden servir de guía diagnóstica.

Palabras clave: Daño cerebral traumático. Peritación psiquiátrica. Ley 30/95.

INTRODUCTION

Cranioencephalic traumatisms (CET) have become a first order health problem¹: traffic accidents, as well as work, sports and domestic accidents, give rise to brain lesions that generally had a fatal prognosis some decades ago. Improvement of immediate care services, of the Intensive Medicine and Neurosurgery Services have multiplied the survival rate of this group of patients,

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José Ignacio Quemada Ubis Hospital Aita Menni Egaña, 10 48010 Bilbao (Spain) E-mail: q@aita_menni.org with the consequent increase of morbidity of persons with traumatic brain damage sequels. In those cases, which are the majority, in which the lesions were the final result of a traffic accident, compensation of the sequels is governed by a law that ordered and limited the previous judicial discretionality. In the following pages, we analyze the aspects of the Civil Liability and Safety Law in Circulation, 30/1995 that affects the psychiatric assessment of these patients. The authors, two psychiatrists and one neuropsychologist, form a part of the teams that are dedicated exclusively to the care of patients with acquired brain damage and, since this legal framework entered into functioning, we have been working with physicians who assess body damage, lawyers and judges in the necessary interpretation and translation of our reports to scales of the law. What is expressed in the following is no more than the destilled and contemplated product of these first years of experience.

THE CONCEPTUAL SEQUENCE

At least three other overlapping terminological universes mediate among the language used to characterize brain lesions in their acute phase (for example, contusion, hemorrhaging or endocranial hypertension) and the use of the judicial decision. If we accept the simile of a sequence or chain to represent the concepts that are connected to take us from the brain lesion to the judicial resolution as valid, we must distinguish five large links: brain lesion, psychopathological description, psychiatric nosology, legal frameworks and judicial decision (fig. 1).

All the connections between the different links show points of instability or fragility. The problems are not limited to the translation and adaptation of the psychiatric nosology to the legal frameworks. In the following sections, the conceptual problems proposed in the jumps from lesion to psychopathology and from psychopathology to diagnosis are outlined (fig. 1).



Figure 1. Conceptual and semantic scopes that connect the brain lesion with the determination of compensation in the judicial decision.

BRAIN LESION AND PSYCHOPATHOLOGY

The descriptive language of psychiatry and neurology was coined in the XIX century. The diseases that promoted the development of this language were organic and functional psychoses, dementias and focal brain lesions³. However, socio-health care epidemiology presently gives us a disease map different from that of one or two centuries ago. Together with the longevity factor, with the consequent increase in disease linked to aging, the importance of the lesions associated to cranial traumas secondary to traffic and work accidents, fundamentally, must be recognized. The physiopathology of the TBI has also been modified in recent decades. Previously, cranial traumatisms were produced by the impact of an object or a bullet against a static skull; nowadays, the most usual is that the brain must absorb the kinetic energy of a mass that moves at great speed and impacts against static objects. This acceleration-disacceleration mechanism determines a diffuse cerebral pathology, characteristic of traffic accidents, that affects the integrity of millions of axons, the basal regions of the frontal and temporal lobules and that do not always have a clear neuroanatomic correlate by neuroimaging techniques⁴.

Up to now, the descriptive language of psychopathology has been behaving as if it were exhaustive and contemplated all types of behavior and abnormal psychiatric experience, but it is not sensible to suppose that new forms of lesion could give rise, in turn, to new signs and symptoms. In fact, neuropsychiatry had never previously faced such a large group of patients with organic personality disorder. Thus, we are faced with behavioral disorders that are grouped under the epigraphs of disinhibition or apathy, but that are clearly insufficiently studied. Equally, patients who have recovered from a TBI and have good capacity of introspection frequently describe an «emotional instability» new for psychiatrists who are familiar with the psychopathology of affectivity in contact with unipolar and bipolar depressions. Other psychopathological disorders, as is the case of paramnesias⁵, of the alterations of experiences and sensation of familiarity in regards to reality (deja vu)⁶, are already described, but forgotten, and thus it may be well to revive them.

Although from here on, this article will focus on analyzing the translation process between psychiatric nosology and the law 30/95 scale, these comments serve to avoid the temptation to think that the psychopathological building, and consequently, also nosological one, is finished. The challenge to investigate new symptoms and signs, as well as their nosological consequences, is more in force than ever.

NOSOLOGY OF THE PSYCHIATRIC AND NEUROPSYCHOLOGICAL DISORDERS SECONDARY TO ACQUIRED BRAIN DAMAGE

In this article, the diagnostic categories included in the section of organic mental disorders (F00-F09) of the tenth revision of the International Classification of Diseases (ICD-10)⁷ will be used preferentially. Its comparison with categories of the diagnostic and statistical manual of mental disorders (DSM-IV)⁸ is practically complete. In the DSM-IV, the cognitive deficits are grouped in a single diagnostic class, but the psychiatric syndromes whose origin is the organic lesion are classified together with similar syndromes (schizophrenia, bipolar disorder, etc.). The «ragbag» categories that end with the «non-specified» postscript will not be included in this discussion.

Neuropsychology has experienced an extraordinary development in the last two decades. The explanatory models of the cognitive functions, such as attention, memory, visual-spatial capacity or executive functions have become more sophisticated and a combination of instruments have been developed that make it possible to examine different components of these functions and to assess both healthy individuals as well as patients. However, neuropsychology, given its assignment to dimensional models, has not developed a categorical nosology similar to those used in medicine.

The dominant psychiatric classifications (ICD-10 and DSM-IV) incorporate some categories that are mainly justified by the neuropsychological deficit, but they are few if the variability of the presentations possible, their high prevalence and the importance for the subjects who have suffered a TBI are taken into account.

In the specific case of ICD-10, the range of neuropsychological deficits secondary to traumatic brain damage must find their diagnosis in one of the following three categories:

- 1. «Dementia in other specific diseases classified elsewhere» (F02.8).
- 2. «Organic amnesic syndrome not induced by alcohol or other psychoactive substances» (F04).
- 3. «Mild cognitive disorders» (F06.7).

On the other hand, in the DSM-IV, dementia having a traumatic origin has a specific category («dementia due to cranial traumatism») and «mild cognitive disorder» does not appear even though there is a category having vague limits that is called «unspecific cognitive disorder» (F06.9 in the ICD-10).

Two of the most prevalent neuropsychiatric syndromes and also most specific of the psychopathology secondary to traumatic cerebral damage are «organic personality disorder (F07.0) and post-concussional syndrome» (F07.2). This last is found in the ICD-10 and appears in the DSM-IV within the appendix dedicated to new diagnostic categories proposed.

The rest of the neuropsychiatric syndromes that appear after the TBI are included in the section F06 of the ICD-10 that is called «Other mental disorders due to brain damage and dysfunction and to physical disease». This list is much more exhaustive than that corresponding to the neuropsychological sequels, which, probably, is due to the fact that they are syndromes very close to classic psychopathology.

- F06.0 Organic hallucinosis.
- F06.1 Organic catatonic disorder.
- F06.2 Organic delusional (schizophrenia-like) disorder.
- F06.3 Organic mood (affective) disorders.
- F06.4 Organic anxiety disorder.
- F06.5 Organic dissociative disorder*.
- F06.6 Organic emotionally labile (asthetic) disorder*.

THE PSYCHIATRIC AND NEUROPSYCHOLGICAL SEQUELS IN LAW 30/95

The psychiatric legal assessment of patients with severe TBI generally has one of the following objectives:

- 1. Estimate the psychic and body damage caused by third persons, as well as the possible sequels derived, to proceed to compensation.
- 2. Determine the sequels and functional impact in work incapacity assessment processes.
- 3. Act as an expert in processes to determine civil competence.
- 4. Contribute as an expert in the determination of imputability in a penal process.

Other situations, not strictly medical-legal, but in which psychiatric legal assessment is useful, are the determination of the capacity of a person to continue to drive vehicles or their capacity to handle firearms.

This article is limited to analyzing the problem of the determination of neuropsychiatric and neuropsychological sequels secondary to TBI in traffic accidents. The «compensation scales for circulation accidents» as well as systems to assess personal damages caused in this type of circumstances were published as appendixes and tables to the Civil Liability and Safety Law in the Circulation of Motor Vehicles (Law 30/95 of the Planning and Supervision of Private Insurance)⁹ (more in detail, table VI makes specific reference to the classification and assessment of sequels).

This law has a binding character for the judge and is having important repercussions in the way that economic compensations are determined for traffic accident victims. Establishment of diagnostic categories and their comparison with fixed score ranges eliminates the principle of judicial discretionality that previously dominated the determination of the compensations. Some authors consider that the system excessively confines the judicial work and that it is unduly equal in the compensation of concepts such as suspended profit¹⁹, but it is no less certain that it eliminates the risk of «legal lottery» and decreases litigiousness.

The scale establishes a starting point for the calculation of compensation once the injury is consolidated or the functional incapacity is stabilized. The points, that have a value inversely proportional to age, make it pos-

 $^{^{\}ast}$ These categories do not have an equivalent one in the DSM-IV.

sible to establish a basic compensation to which a series of corrective factors must be applied, that is: for moral injuries, for loss of accredited income, for incapacity for usual occupations, for esthetic damage and «according to circumstances» factor that maintains a discretional character.

However, the scale does not include definitions or operative criteria, which distinguishes it from the nosological systems used with clinical or research objectives. It also has no application rules, especially in regards to the possibility of diagnosing several sequels simultaneously or the advisability of using some type of diagnostic hierarchy in which certain sequels include other more mild ones. The following are examples of possible rules that would have a solid argumental basis: dementia includes any other psychic sequel, the impossibility of diagnosing more than one memory sequel, or that the sum of neuropsychological sequels in cases that are not a dementia does not exceed a certain maximum score.

Tables 1 and 2 show the neuropsychiatric and neuropsychological sequels of the scale of Law 30/95 with its corresponding scores.

The work of «fitting together and interpretation» that must be done by the expert (psychiatrist, neuropsychologist, assessor of body injury or all of them) has several difficulties that are mentioned in the following: in the absence of definitions, the limited correspondence between the clinical diagnostic criteria (ICD 10 and DSM-IV) and the scale sequels must be added. Several of the scale sequels do not constitute any syndrome or disorder and are usually considered by the psychiatrists as symptoms that can form a part of different disorders: «temporal-spatial disorientation», «excitability» and continued or sporadic aggressiveness. Some of the sequels receive their name from syndromes in disuse, such as the case of «moria» and of «post-traumatic neurosis». The difference between «organic personality syndrome»(30-40) and «personality disorder»²⁻¹⁰ is not clear since, from a clinical point of view, the personality change can occur with diverse profiles (apathic, disinhibited, exacerbation of previous traits), psychosocial severity or repercussion, but it is a single nosologic entity.

| | Scores max-min |
|----------------------------------------|-------------------|
| Postconcussional syndrome | 15-5 |
| Post-traumatic neurosis | 15-5 |
| Manic-depressive psychosis | 40-30 |
| Post-traumatic depressive syndrome | 10-5 |
| Temporal-spatial disorientation | 20-10 |
| Moria (easy joke, infantilism) | 35-25 |
| Excitability, continued aggressiveness | 30-10 |
| Excitability, sporadic aggressiveness | 10-2 |
| Demential syndrome | 95-75 |
| Personality disorder | 10-2 |
| Organic personality syndrome | 40-30 |

| TABLE 2. | Description | of neuro | psychological | sequels |
|----------|-------------|----------|---------------|---------|
|----------|-------------|----------|---------------|---------|

| Scores max-min | n |
|------------------------------|-----|
| onserved comprehension 30-25 | |
| ion 45-35 | |
| 50-45 | |
| de or post-traumatic) 20-2 | |
| 45-35 | |
| 20-10 | |
| on 15-2 | |
| se capacity 15-5 | |
| se capacity | 100 |

In relationship with the neuropsychological sequels, the scale poses several difficulties. In the first place, and this is a problem that neuropsychology also poses to the DSM-IV and the ICD-10, is the translation of dimensional information to a categorical information gathering system which, in the case of the scale, is accompanied by jumps in score (which, in the last case, would be translated into important economic differences).

The same selection of some of the terms and concepts also calls our attention: dysphasia is a term usually reserved for development disorders and it is not clear if the intention of the scale was to distinguish between nonfluid or Broca type expressive aphasias («dysphasia with comprehension»), fluid or Wernicke type comprehension aphasia («dysphasia without comprehension») and «global or mixed aphasia».

Attention disorders seem to count on two categories that overlap in score: «decrease of attention» and «capacity of decreased response» (perhaps thought for patients with bradypsychia). Regarding the term «deficit of psychic coordination», this is very vague and thus leads to arbitrary use. It would have been preferable to substitute it for that of executive functions deficits, that refers to the loss of capacity to formulate goals, planning the way to achieve them and carrying out the plan effectively. Since the work of Luria¹¹, it has been well known that this type of disorder is also frequent after traumatic brain lesions, due to the high prevalence of prefrontal injuries in this population.

The memory disorders must be included in «fixation amnesia» or in a second more confusing category, «amnesia (retrograde or posttraumatic)». The first can be assimilated, both due to the terminological similarity as well as by the severity assumed by the score range^{35.45} with the organic amnesic syndrome. In relationship to the second one, the terms retrograde and posttraumatic refer to different memory problems and thus are a confusing category: the retrograde term is understood in contrast to anterograde, and it is defined as the affectation of the capacity of evoking information of events that are well established before the onset of the disease¹²; in the TBI, the term retrograde amnesia is usually reserved for the period of minutes or hours prior to the trauma for which the patient has no memory trace; the term post-traumatic amnesia refers to the period after coma (or subsequent to TBI) during which the patient is conscious and interacts but does not register information and thus behaves temporally as if he had severe amnesic syndrome.

In the daily clinical activity, it is seen that memory and learning disorders secondary to TBI, that cannot be classified as memory syndromes, can include a very varied seriousness and typology: difficulty to learn episodic, semantic or procedural, verbal, visual-spatial type information, etc.

Finally, the use of intelligence quotient (IQ) score ranges in order to establish sequels lead some experts to argue results from 80 and above as evidence of intellectual integrity; this assumption is erroneous for two reasons: a) patients with serious memory syndrome can have a high IQ, and b) prefrontal neuropsychological disorders after a TBI do not have to be accompanied by a marked decease in the IQ, which contrasts with the difficulties of these patients to face new, unexpected or changing situations and use their cognitive abilities effectively in the real world^{13,14}. Thus, the classical evaluation of intelligence must be complemented with a neuropsychological assessment that includes at least attention, memory and executive function tests.

SOME USUAL MEDICAL-LEGAL CONFLICTS

The physician assessing body injury includes the translation of the diagnosis of the specialists to the scale categories in his reports; this mission can be very complicated when the subject in question must have knowledge about a subspecialty. Such is the case with the neuropsychiatric and neuropsychologic sequels. In these situations, collaboration of the specialist and physician assessing the body injury is essential. In preceding sections, the disparity between diagnostic tools of psychiatrists and the tools the specialists must use in the assessment of body injury by law have been explained.

In this last section, the paradigmatic medical-legal conflicts which the authors have faced are repeatedly considered and the criteria that they followed on resolving them are commented on. These proposals aim to concourse debate on these problems and contribute to a future refinement of the scale. The cases that are explained frequently give rise to divergent expert reports.

Post-traumatic dementia or organic personality disorder

The coexistence of behavior changes (or personality disorders) and neuropsychological deficit is a very common situation in patients with severe TBI. Before neuropsychological tests were used routinely, these patients called the attention of the psychiatrist more because of their behavior changes than due to the deficit itself in intellectual capacity. However, in an evaluative setting, detection of memory, attention and/or executive functions deficit with the corresponding tests opens the door to a possible diagnosis of dementia. Both in the ICD-10 as well as the DSM-IV, reference is made to the necessary presence of «multiple cortical function deficit» and it is added that this should have a repercussion in the daily life activities of the subject. But this last sentence admits diverse interpretations that can give rise to activities the fact that even cases that are relatively mild are defended as cases of dementia.

Using the scores given to each syndrome, the scale reserves the diagnosis of «demential syndrome» (75-95) for the most serious cases. The use of this diagnosis in cases of patients with wide autonomy in daily life activities would be a comparative offense with those patients who require help or permanent supervision from a third person to dress, maintain hygiene, move about or eat. This use, in the opinion of the authors, would detract from the objective and the spirit with which the scale was designed.

The clinical reality is much less categorical than can be supposed from the scale or the psychiatric nosologies. Figure 2 expresses graphically this discrepancy between diagnoses that assume very differentiated groups with clear limits between them and a much more continuous reality; in its lower half, clinical reality is represented as all the possible combinations of any severity of cognitive deterioration and personality disorder. In the daily clinical activity, prototypal cases of behavior disorder (clear organic personality disorder), of serious cognitive deterioration (clear dementia) and of a complete range of intermediate cases that make it necessary to draw lines in a reality with all the gray ranges possible are presented.

In an attempt to respect clinical criteria, but also to contribute to a just compensation of the injury, it is proposed here that the limit between dementia and organic personality disorder be established by using the fundamental criteria of dependence or non-dependence on a third person to perform basic activities of daily life: dressing, hygiene, sphincter control, moving about and eating.



Figure 2. Uupper part: categorical classification included in the law scale; Lower part: it represents the continuous and dimensional clinical reality; Horizontal axis: degree of cognitive deterioration; Vertical axis: seriousness of the behavior disorder.

Application of this proposal does not completely eliminate the conflicts in the borderline cases but would enormously reduce the number of lawsuits in regards to these diagnoses. It is clear that in those cases in which an organic personality disorder is diagnosed, the accompanying neuropsychological deficit should be recorded as another additional sequel. On the contrary, the diagnosis of posttraumatic dementia already includes any other type of cognitive deficit.

Spontaneous psychiatric disease or spontaneous to TBI

Development of a schizophreniform psychosis, bipolar disorder or depression during the months that follow traumatic brain damage brings up the debate regarding the contribution of the brain lesion to the etiology of the psychiatric picture. The ages in which these diseases make their debut spontaneously (especially the first two) coincide with the incidence peaks of cranioencephalic traumatisms, which contributes to the confusion. It is important to mention that organic psychosis secondary to brain trauma have been described for many years and have been especially detailed since the Second World War¹⁵; thus, the discussion does not have to focus on whether there is an organic psychosis as a differentiated entity of the schizophrenia, but rather on the definition of criteria that can help us distinguish between both.

In the following, five criteria are mentioned that can be used to estimate the probability that the traumatic brain injury would have high etiological importance for the existence of a psychosis:

- 1. *Temporal proximity.* The closer the temporal proximity between the moment n which the brain injury is produced and the onset of the psychiatric syndrome, the greater force of the causal relationship. These pictures generally do not occur while the patient is in a state of posttraumatic confusion; the physiopathology itself of confusion probably prevents the expression of the psychotic symptoms. The temporal interval between the traumatism and the debut of the psychiatric syndromes varies from days to years, although it is more common that the earlier onsets correspond with bipolar disorders^{16,17} and the later ones with schizophreniform psychosis¹⁸.
- 2. Psychopathological pattern. The presence of atypical symptoms, such as identification disorders, is suggestive of psychosis secondary to brain damage¹⁹. Equally, suspicion of organic etiology is increased in those cases in which a persistent attention or memory disorder gives rise to an explanation of delusion nature that relieves the anguish or confusion caused by the experience of cognitive deficit²⁰.
- 3. Associated neuropsychologic deficit. Presence of a neuropsychological deficit having an unusual profile or severity in patients with schizophrenia or bipolar disorder confirms the presence of brain

damage that can also be the neuropathological base of the psychiatric syndrome.

- 4. *Positive neuroimaging*. Confirmation of brain injuries in structural neuroimaging tests (CT or MRI) introduces another differentiating element in regards to the usual findings in psychiatric diseases.
- 5. *Family background*. Although the presence or absence of family backgrounds does not constitute by itself an unmistakable argument to defend one etiology or another, the presence of family backgrounds of the same type of disorder increases the probability that the patient would present a previous vulnerability on which the TBI has acted as a causal/precipitating factor.

Post-concussional syndrome versus organic and/or cognitive deficit disorder and/or organic personality disorder

In the ICD-10 diagnostic research criteria, it is warned that the nosologic situation of the postconcussional syndrome is not totally clear. The consensus that is emerging internationally points in the direction of defining it as a heterogeneous group of symptoms: somatic, cognitive and psychologic, that can appear and persist variably after a TBI, in generally, with mild intensity²¹.

Among the somatic symptoms, headache, dizziness, intolerance to noise or to light, fatigue, tinnitus and sleep disorder are included. The subjective complaints of lack of attention, concentration or memory make up the nucleus of the cognitive symptoms. In the ICD-10, it is added that «even if these are not accompanied by the objective presence of marked deterioration (for example, in the psychological tests)». On the contrary, the research criteria of the American Psychiatric Association (APA) stress the need of objective cog-nitive deficits as a requirement for the diagnosis of postconcussional disorder. The question immediately arises: what values are going to be considered as deterioration from a psychometric point of view? Scores below the percentile 10? Two standard deviations below the mean? In only one of the cognitive tests, or in several? To try to resolve this question-although in relationship with ano-ther disease, some years ago Ingraham et al.²² suggested that a decrease of two standard deviations in two independent tests of different cognitive domain was little likelihood of being the result of chance. The emotional symptoms, on their part, include disorders such as emotional lability, sadness or anxiety, and behavior changes such as irritability, aggressiveness; and in the case of the DSM-IV also apathy and social or sexual disinhibition.

The heterogeneity of the syndrome suggests a complex differential diagnosis to the psychiatrist. In each one of the symptomatic domains, the affective, cognitive and behavioral ones, a diagnostic range opens up that is dependent on the severity presented by the symptoms and the threshold used by the clinician. Thus, in those cases in which the emotional symptoms are especially intense, the possibility will be posed of diagnosing an «organic affective disorder», an «organic emotional lability disorder» or an «organic anxiety disorder». In the cognitive domain, the diagnostic alternative is «mild cognitive disorder» (with its different implications in regards to its translation to scale category 30/95) and in the behavior setting, it is the «organic personality disorder».

The errors of the psychiatric expert may go in both directions:

- 1. In the cases of moderate or serious TBI, the error may consist in overlooking a marked cognitive deterioration, especially if there is no neuropsychological evaluation of quality and/or minimizing a personality change or an emotional disorder and diagnosing the case under the general epigraph of «postconcussional syndrome» when the picture corresponds with an «organic affective disorder» or with an «organic personality disorder», sometimes also including different neuropsychological disorders (attention, memory, etc.).
- 2. Paying excessive attention to results slightly below the mean in demanding cognitive tests when the patient functioning in daily life activities has not been affected and the TBI has been mild. Within this second type of possible error, there are also problems derived from the overestimation of the emotional or behavior disorder. In these latter cases, the problems inherent to the evaluation of income and simulation are very present. The milder the TBI, the greater the risk of the presence of these latter factors.

There are several points that must be taken into account to try to reduce the rate of diagnostic error in these cases:

- 1. The *diagnostic profile* presented by the patient should be the main guide. Although the «post-concussional syndrome» seems to be very hetero-geneous, the clinical reality indicates that, in fact, it exists and it is brought up frequently. The major difficulty is not in its recognition but rather in the interpretation of the persistence of the disorder in time (organic nature versus psychogenic explanation). A complete quasi postconcussional syndrome (five or more symptoms) is rarely more than a postconcussional syndrome. However, isolated symptoms, such as dizziness, fatigue or depression may have very different origins and their relevance for the diagnosis is very low.
- 2. The *interview with informers* should supply confirmatory information or not of the clinical picture reported by the patient and, above all, of the functional impact that the patient has on his/her autonomy; it will also allow us to identify the problems of lack of awareness (anosognosia) on important cognitive deficits or personality changes that the patient is denying. Family members are generally much clearer than the patient in the cases of apathy or disinhibiton having an organic nature ²³.

- 3. If the *severity of the TBI* is clearly established, it supplies differentiated probabilities of suffering one type or another of sequels. The posttraumatic amnesias (PTA) of days or weeks in length indicate a moderate or severe TBI and, thus, an increase in the probability of the presence of an organic change of the personality and/or of a cognitive deficit. The PTA of hours in length (mild TBI) rarely presents more severe sequels than a postconcussional syndrome, the most frequent being the complete recovery in a period of weeks or a few months.
- 4. The findings of brain lesion in the *neuroimaging* tests (CT or MRI) are very rare in the postconcussional syndrome and, on the contrary, are usual in the cases of organic personality disorder and of cognitive deficit.
- 5. Finally, the *neuropsychological assessment* constitutes an obligatory procedure in every case. In conjunction with the performance data in the activities of daily life, they have made it possible to distinguish reliably between marked cognitive deficit and subjective complaints of decreased attention and memory²⁴.

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