

PSYCHO-BEHAVIORAL DISORDERS IN FRONTAL LOBE SYNDROME

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Abstract:

This article is an evaluation of the different psychiatric manifestations of the Frontal Lobe Syndrome of different etiologic mechanisms. We highlighted the importance of the psychiatric syndrome as a first manifestation for space occupying cerebral lesions.

Key words: frontal lobe, dementia, somatisation

INTRODUCTION

Biological Psychiatry is the crossroad between the descriptive and explicative stage in understanding and approach of psychiatric disorders.

The Frontal Lobe Syndrome is known, in the medical literature, as the association of neurological and psychiatric symptoms after frontal lobe lesions.

We often notice that the clinical manifestations may begin with psychiatric symptoms only. This may be a diagnostic trap for the practitioner doctor, who must always be aware of the fact that a patient with psychiatric manifestations at presentation may develop a total different clinical outcome that corresponds to an organic brain lesion.

The semiology of Frontal Lobe Syndrome describes various signs and neuro-psychiatric symptoms.

There are different etiologies of the frontal lobe lesions. The main causes can be grouped into: traumatic lesions, vascular, tumoural, infectious causes, degenerative lesions. The mechanism can be different, sometimes there are different pathogenic mechanisms of the same disease.

The main pathogenic mechanisms involved in frontal lobe syndrome are: the infiltration of frontal lobe, the compression of the lobe, cerebral atrophy, cerebral substance loss post-surgery, associated mechanisms (compression and infiltration).

The direct effects of brain trauma can be cerebral concussions, contusions of various intensity. These lesions can develop areas of cerebral destruction sometimes of microscopic size but with serious clinical manifestations.

Other effects post trauma can be the developing of cerebral hematomas. They have a mass effect of compression of the brain and ventricular system, acting like intracerebral expansion tumours. Many times this two mechanisms are associated (contusion-hematoma). Having a synergistic action, they can constitute a critical factor which must be taken into account, and the treatment must be oriented accordingly.

Even if the hematoma is surgically evacuated, the cerebral contusion is very difficult to be cured.

Sometimes, in very serious traumatisms, the evolution is inevitable towards exitus.

A particular case is the chronic subdural hematoma. It can progressively compress the brain, over a variable time interval, sometimes over two to three weeks. This can make the traumatic event pass unnoticed and once the neuro-psychiatric manifestations appear the patient is wrongly oriented towards psychiatry clinic.

We underline the fact that the incidence of the acute or chronic cerebral traumatism is high in the psychiatric clinics. The traumatism can take place before the admission or during the patient hospitalization and many times it can go unnoticed. For this reason, the past medical history should be very carefully taken before admission.

Alcohol abuse is another factor involved in traumatic etiology of brain lesions. This can aggravate the effects of trauma.

The psychiatric disorders of the frontal lobe trauma can be more or less specifically. After light traumatisms, the patient can present with irritability, anxiety, fatigue, memory problems, intermittent headache, insomnia. Although, mood disturbances can occur with injury to either hemisphere, mania has been primarily associated with right-side frontal lobe injury.

These states are so called postcontusional syndromes. The persistence of these states over three – six months is supposed to be caused by overlapping factors like inefficient treatment, malingering.

The psychiatric symptoms in severe cerebral traumatisms are much severe. They are characterized by anxiety, mania, obsessive-compulsive syndromes, bradiphreny, increase homicidal or suicidal risk. Some patients can present with isolated symptoms (apathy, insight), others may have much serious manifestations like Moria type or even major depression. Memory loss, concentration problems are frequent associated. Subcortical dementia can be met in very severe of repeated traumatisms.

The differential diagnostic of the postcontusional syndrome is: major depression, behavioural disorders, conversion disorders, stress.

An important aspect of these traumatisms is the medico-legal substrate. The physician must pay attention to the litigable problems.

The tumours of frontal lobe can act differently accordingly to the patho-physiology. Meningiomas through cerebral compression develop a slow progressing intracerebral high pressure syndrome. Other tumours have an infiltrative development and produce a perilesional edema with a mass effect over the ventricular system (gliomas, cerebral metastases).

More anterior the tumour develops, more evident the psychiatric symptoms will be. Initially the symptoms are accordingly to the location of the lesion, in the advanced cases the symptomatology is overlapping and the intracranial pressure symptoms become the most predominant. We noticed that young patients tend to have conscience disorders and the old patients develop psycho-organic syndromes more frequently. In 70% of patients with frontal tumours, dementia will develop.

As far as vascular etiology is concerned, blood has a destructive effect over cerebral substance. Hemorrhagic stroke is one example. Repetitive ischemic stroke can produce lacunar type modifications which can be the cause of cognition disorders later on.

Topographical correlations have been established between the localization of the stroke and the symptomatology. Stroke localized in basal nuclei can manifest with frontal lobe symptomatology. This can be explained by the distance influence effect, diaschisis.

The pathology of ischemic stroke consists of cerebral substance destruction in the hypoperfused area. Major depression post Stroke is a frequent syndrome met in medical practice.

In the case of pseudobulbar syndromes, psychiatric disorders can manifest as dementia syndromes.

Frontal lobe syndrome can develop after surgery for cerebral aneurisms. The pathology can be the subarachnoid hemorrhage or the mechanical traction of the frontal lobe during surgery.

In many of these causes the psychiatric manifestations can develop long before the neurological manifestations. The clinician must be very careful when investigating these cases, and to send them to neurology or neurosurgery services.

Alzheimer's disease research has largely concentrated on the study of cognitive decline, but the associated behavioural and neuropsychiatric symptoms are of equal importance in the clinical profile of the disease. There is emerging evidence that regional differences in brain atrophy may align with variant disease presentations. Delusions were associated with decreased GM density in the left frontal lobe, in the right frontoparietal cortex and in the left claustrum. Apathy was

associated with GM density loss in the anterior cingulate and frontal cortex bilaterally, the head of the left caudate nucleus and in bilateral putamen.

First psychiatric manifestations in frontal lobe syndrome consist of: cognition disorders (memory, attention), time-space disorientation, instinctive behaviour modifications. There are certain clinical syndromes that belong to frontal lobe localization such as Korsakoff Syndrome, Moria Syndrome, Briesthmangel Syndrome.

The differential diagnosis of the psychiatric manifestations of the frontal lobe syndrome consist of: personality disorders, delirium, dementia, mania, depression episodes, schizophrenia, somatisation.

CONCLUSIONS:

1. The psychiatric manifestations have an increased incidence in the frontal lobe disorders.
2. The psychiatric manifestations are different according to the pathology of the disorder (infiltration or compression) as well as the localization and the frontal lobe involved (right or left).
3. It is very important to exclude an organic disorder that manifests with psychiatric symptoms. The past medical history, clinical examination, and imagistic studies (CT, MRI) are of most importance.

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