

CLINICAL SYMPTOMS AND DIAGNOSIS OF THE UNILATERAL NEGLECT SYNDROME

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INTRODUCTION

Neglect as a neurological phenomenon is known as a syndrome of inattention of one half of the body and/or extrapersonal space. Disturbances of sensorimotor functions are as well observed as of memory, emotion and higher cerebral activities. Patients with full developed unilateral neglect (UN) may show a profound change of behaviour also as the following case will demonstrate.

CASE REPORT

A 38-year old woman, right-handed, was brought to the clinic because of a growing left hemiparesis and focal motor seizures. A right parietal meningioma was found in CT. After the operation, she complained she remarked loss of relativity with the concomitant impression of strangeness and shrinkage of the left upper limb. She also had the feeling of the left body half not belonging to her and being extremely cold. She failed to see persons and objects especially in the left half of her visual field and had difficulties in estimating distances and spatial relationship of objects in general. She was unable to dress alone although the paresis was only slight. She made mistakes at reading, writing and calculating on the paper. She sometimes got lost in the clinical surroundings, but also in her own village and house. Within 2 ears some improvement was observed.

PHENOMENOLOGY OF UN

There are numerous descriptions of patients with UN syndrome, e.g. by McDonald Critchley [2] giving account of a conductor conducting only half of his orchestra. There are also cases of male patients shaving only half of their face, or of patients playing chess only on one half of the board. Jang described the case of a patient with UN, whose self portrait consisted only of one half of his face. Table 1 shows a list of typical symptoms of the UN syndrome.

Table 1

Phenomenology of UN Syndrome

Loss of attention for one body half and space contralateral to the site of the lesion
Loss of topographical memory
Spatial, non-linguistic dyslexia, dysgraphia, discalulia
Distinction phenomenon
Motor, acoustic, sensory, visual neglect
Anognosia

DIAGNOSIS OF UN

1) Patients with UN show considerable difficulties in copying or spontaneous drawing, especially in tasks with spatial relationships. Some drawings of the patients with typical errors, mainly in the left half of the picture, are to be found in Fig. 1.

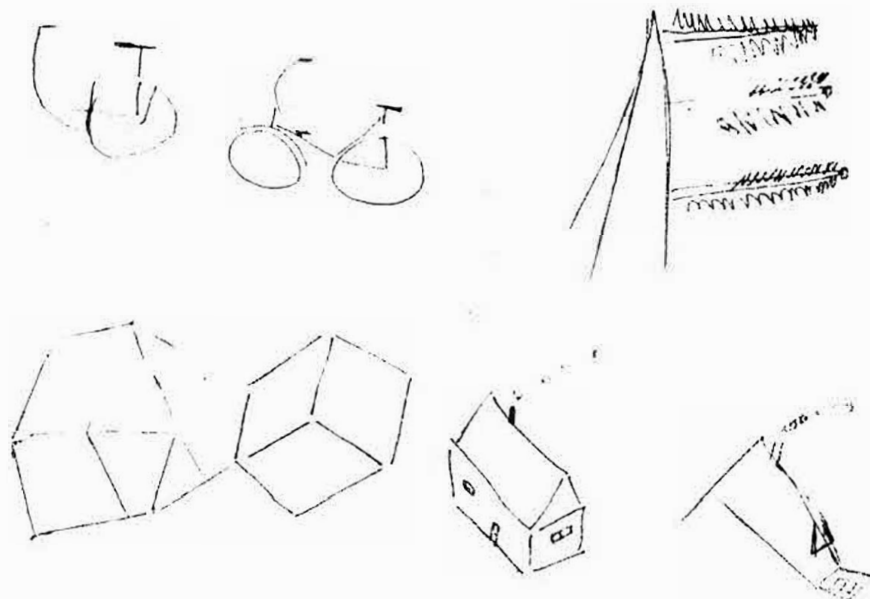


Fig. 1.

2) There are psychodiagnostic tests intrinsic for the UN syndrome, some of which are listed below:

- Rod-Orientation Test, De Renzi (1971)
- Route-Finding Test, Semmes et al. (1963)
- Gestalt Test, Bender
- Village Scene Test, Butters and Barton (1970).

3) EEG and evoked potentials studies. Detailed investigations of the EEG [9] and of the evoked potentials [4] in patients with UN syndrome showed the evidence of lateralization with a dominance of the right parietal lobe for the function of attention and orienting response.

4) Endocrinological investigations. Hier and Crowley [6] compared healthy men and males with secondary hypogonadotropic hypogonadism with a group of idiopathic hypogonadotropic hypogonadism. They found a distinct spatial disability of the latter, so they supposed a specific influence of steroids on brain receptors influencing the control of spatial ability. This specific form of endocrinological method surely needs further investigation.

THEORETICAL CONSIDERATIONS

Many authors agree in the opinion that the classical site of lesion producing UN in man is the parietal region of the nondominant hemisphere. There are several hypotheses concerning the origin and pathophysiology of UN. Brain, believing that the parietal lobe contained the body scheme, considered UN a special form of visuospatial agnosia. Denny-Brown et al. proposed that UN was a defect of spatial perception and that this syndrome is a disturbance of sensory synthesis (morpho-synthesis). Battersby et al. tried to explain UN as a syndrome of disturbed sensory input and its following integrative systems (deafferentation hypothesis). Poppel-Reuther, Heilman and Valenstein, Watson et al. considered UN as a unilateral loss or diminution of the orienting response by lesions of the arousal system and the function of the cortico-limbic-reticular loop. According to these authors UN may also result from a disconnection of inter- or intrahemispheric junctions.

In general, a unique hypothesis of the origin and pathophysiology of UN does not exist, further clinical and experimental investigations are necessary.

COURSE AND REHABILITATION OF UN

In many cases the acute stage of the syndrome shows a complete loss of the orienting response with signs of ignoring one half of body and space, hypokinesia of the affected limbs and loss of topographical memory.

Chronic UN shows remarkable improvement in many patients, though with signs of the extinction phenomenon and of behavioural abnormalities like confabulation, dissimulation, anosognosia and personification of the affected body half. Diller and Weinberg summed up their experiences of a special rehabilitation programme for patients with UN, consisting of a specific training period after exact neurological examination and testing. A comparison of task-results before and after the programme showed improvement of constructive abilities, reading, writing, drawing and copying.

CONCLUSIONS

Attention, in the opinion of many authors, is a mental status much like consciousness. Hemi-inattention as seen in the UN syndrome is an expression of perceptual and integrative rivalry which becomes manifest in the conditions of disturbed brain functions. Space UN represents an imbalance in the orienting tendencies with orienting towards the side of the lesion and deficient orienting away from the lesion.

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PARIETAL LOBE SYNDROMES

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Parietal lobe lesions displaying particular symptoms require clinical accuracy and keen detecting skill in their examination. Besides McDonald Critchley's classical works [5] [6], many researchers contributed to the knowledge of these symptoms: Asenjo [3], Bay [4], Hecaen [8] [9], Hebe [11], Denny-Brown [7], Hoff [10], Tenber [14], and many others. Our earlier researches on parietal tumours worked out also a frequency estimation technique with a view to obtaining a more precise clinical diagnosis [1] [2]. Now, the symptoms of the parietal lobe lesions are well known.

Essentially, the parietal lobe functions consist of the sensorial integration of one's own body, the integration of the surrounding space, the integration of one's body in this space, and the praxia of motor actions which rely precisely on this relation between one's body and the surrounding space. It is from these functions that result the impairments induced by parietal lesions, i.e. sensibility integration deficits leading to body scheme disturbances, surrounding space integration deficits, impairment in the integration of an individual into environment, and apraxias.

There are, however, certain aspects of parietal lobe knowledge still under discussion. One of the most important aspects refers to the difference between the disturbances induced by lesions of the dominant and nondominant parietal lobes. While there is full agreement as to their existence, the opinions differ in as far as the meaning of these differences is concerned. It is still maintained that the right parietal lobe would be prevalent in space integration, while the left parietal lobe (together with the temporal one) would be responsible for time rather than space integration. We will give our opinion further below.

Clinical symptoms and diagnosis of the unilateral neglect syndrome.

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Abstract

Presents the case of a right-handed 58-yr-old female with unilateral neglect syndrome (UNS). The phenomenology of UNS, its diagnosis, theoretical considerations, and course and rehabilitation are discussed. It is concluded that hemi-attention in UNS is an expression of perceptual and integrative rivalry that is manifested in disturbed brain functioning and that space UNS represents an imbalance in orienting tendencies, with orienting toward the side of the lesion and deficient orienting away from the lesion. (10 ref) (PsycINFO Database Record (c) 2016 APA, all rights reserved)