Misoplegia

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Key Words

Anosognosia • Asomatognosia • Imperception • Misoplegia

Abstract

Amongst the many fascinating abnormal perceptions of parts of the body which may follow strokes and other cerebral lesions is the rare phenomenon of misoplegia. Afflicted patients show dislike, amounting to hatred of the affected part, often accompanied by verbal or physical abuse. Most often the result of a right hemisphere lesion, its precise mechanisms are not well understood. This is a summary of misoplegia and its alleged physiological mechanisms.

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Amongst the less common sequelae of strokes, focal brain trauma and tumours are curious abnormal perceptions of parts of the body, usually most noticeable in the arm or leg. Motor neglect can complicate damage to either hemisphere, but is more frequent with lesions of the right hemisphere, classically the inferior parietal lobule. The most common ‘imperception’ is ‘anosognosia’, the lack of awareness to the existence of disease [1]. In 1876, Hughlings Jackson [2] reported a patient with imperception followed by left hemiplegia. Anton [3] in 1899 described denial of blindness. It was Babinski [4], however, who provided the name ‘anosognosia’, strictly ‘unawareness of the existence of a disease’, but used by Babinski to be ‘ignorant ou paraissent ignorer’ or ignorant of the pa-

ralysis, which he described in left hemiplegia. He also referred to the less severe disorder of ‘anosodiaphoria’: ‘hemiplegics who, without being ignorant of the existence of their paralysis, seem to attach no importance to it.’

Less common are ‘asomatognosia’, neglect, or lack of awareness of a part of the body, ‘somatoparaphrenia’, denial of ownership of a paralysed limb, the supernumerary phantom limbs, ‘personification agnosia’, and the nick-naming of a limb and giving it an identity. Lhermitte (cited in [1]) described a man whose left leg had been previously amputated at the thigh who developed a left hemiplegia. Thereupon the patient not only denied the leg had ever been amputated but insisted that he had an intact and useful left leg that he could see and feel (p. 235).

Misoplegia

Of these anomalies of corporeal awareness, a rare and intriguing variant is ‘misoplegia’. Critchley [5, 6] coined the word, which refers to the morbid dislike or hatred (Greek *miso*-) of paralysed limb(s) in patients with hemiplegia [7]. This may be obvious when the sufferer shouts at, or swears at the paralysed or paretic arm or leg, but it may be extended to striking it with the good hand or deliberately thrashing it against a nearby object. Misoplegia may evolve from, or predate unawareness, denial, unconcern or disownment of the limb, personification of the limb and so forth. Case reports [7] are rare; Loetscher

et al. [8] found only six published accounts. Most but not all show these signs in limbs rendered weak or paralysed from various types of stroke; but tumours may cause the same disorder. Misoplegia appears to be the antithesis of excessive concern [9] or care for the affected limb, a mildly paranoid reaction from which frankly psychotic types of thinking and behaviour may insidiously develop [6].

Suggested Mechanisms of Imperception

Historically, both Otto Potzl [10] and Barkman [11] stated that lesions of the right parietal lobe, right optic thalamus, or right thalamoparietal radiation were essential for denial of hemiplegia, but conversely Muller [12] and Pineas [13] report autopsied comparable cases in which these areas were spared. Of 30 patients with denial of hemiplegia after acute stroke 26 had unilateral right-sided CT lesions and this group showed a significantly higher incidence of lesions in deep white matter and the basal ganglia when compared with those from 10 stroke patients with hemiplegia and visuospatial neglect but no denial [14].

This group of reactions has variously been attributed [1] to:

- 1 a specific focal lesion of the parietal lobe;
- 2 non-focal organic repression or denial syndrome inherent in all victims of brain damage;
- 3 the nature of premorbid personality;
- 4 a final less plausible notion is an iatrogenic basis, dependent on the doctor-patient relationship: 'anosognosia represents a symbolic adapted mechanism under the condition of communicable interaction'.

Another analysis states that unilateral neglect can be either attentional or intentional:

- 1 attentional neglect includes: hemi-inattention; alloaesthesia in which a sensory stimulus given on one side is perceived at the corresponding area on the other; anosognosia and anosodiaphoria (with or without somato-paraphrenia or misoplegia); and sensory extinction;
- 2 intentional neglect: hemi-akinesia; directional hypokinesia; motor impersistence; motor extinction [15].

Critchley [6], though accepting the organic nature of the causal lesion, suggested that premorbid personality traits might predetermine a person's failure to cope with a sudden change in bodily functioning. He argued: 'such an individual has perhaps always been an obsessional and a candidate for hypochondriacal trends by reason of an

innate preoccupation with bodily efficiency and physical fitness'.

It has also been posited that the lesion itself might affect the patient's inhibitory control of affective impulses [16]. A review of unilateral neglect syndromes in monkeys and humans suggests hypothetically [17] an integrated network for the modulation of directed attention within extrapersonal space. Each component gives rise to a different clinical type of unilateral neglect when damaged.

A posterior parietal component provides an internal sensory map; a limbic component in the cingulate gyrus regulates the spatial distribution of motivational valence; a frontal component coordinates the motor programs for exploration, scanning, reaching, and fixating; and a reticular component provides the underlying level of arousal and vigilance. More recent accounts of misoplegia speculatively suggest a dysfunctional system of emotion regulation – that is, a release of repressed negative feelings about a premorbidly affected body part [18].

Conclusion

Thus hypotheses abound, but facts are few. We are so far unable to explain why these fascinating but differing imperceptions occur: why some deny evident paralysis whereas others show disgust, hatred or conversely, occasionally an excessive caring for the affected part.

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