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Gerstmann's syndrome

In the 19th century, there flourished the concept of localising organic function to discrete areas or "centres" in the brain. It was extended to attempts to provide accurate localisation for the more problematical higher cortical and psychological dysfunctions. Of many such syndromes described at the turn of the 20th century, the syndrome of Gerstmann is a good and oft cited example:

"The subject of this paper . . . I first described several years ago (1924)¹ under the name of 'finger agnosia'. It manifests itself as an isolated disturbance in the recognition, naming, choosing, and differential exhibition of the various fingers of both hands—one's own fingers as well as those of another person. . . . Furthermore, I will discuss the association that I noted between this symptom and a disturbance in right-left orientation (in one's own as well as in another's body), agraphia and acalculia.

. . . in some it existed as an independent condition from the beginning, while in others—though seldom—it was a residual syndrome after regression of a more complex deficit.

. . . In its selective form . . . aphasia, apraxia, agnosia have been lacking. Furthermore, the other signs that have sometimes been associated with the syndrome (such as right hemianopsia, diminution of optokinetic nystagmus, amnesic disturbance of word-finding, impairment in reading ability, . . .) can be characterised as neighbouring or bordering symptoms because of their variable appearance and mildness. The phenomenon of finger agnosia itself always appeared as an essential disturbance of recognition and orientation.

. . . It has become evident that the syndrome of finger agnosia, agraphia etc can be related to a focal disturbance in the area of transition between the angular and second occipital convolution. . . . the syndrome . . . is caused by a unilateral lesion in the left hemisphere in right-handed individuals."² Gerstmann referred to corroborative cases of Pötzl

and Herrmann, Schilder, Kroll, and Lange; the syndrome found acceptance in the contemporary corpus of neurological teaching, but was later seriously challenged.

The entity proclaimed by Gerstmann has been seriously arraigned, notably by Critchley in a classic and critical review.³ He demurred at the idea of an autonomous, independent syndrome, and at its alleged localising value. Benton too, harshly but probably justly, regarded it: "an artifact of defective and biased observation having little support for its alleged focal diagnostic significance."⁴ Further, the description was not original: Anton (1899) and Hartmann (1902) described similar cases (though with bilateral pathology and therefore not strictly comparable). Critchley assigned priority to Jules Badal, ophthalmologist in Bordeaux, who in 1888 accurately reported the essential features in a patient named Valérie, suffering the post-eclamptic state.⁵

Josef Gerstmann (1887-1969) of Vienna was a pupil of the Nobel prize winner Wagner von Jauregg; he became professor of neurology and psychiatry and director at the Maria-Therese-Schlossel. He fled the oncoming Nazi regime in 1938, but continued his work in the United States and wrote several papers on the variation of symptoms, pathology, and the localising value of his syndrome.

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- 4 Benton AL. The fiction of Gerstmann's syndrome. *J Neurol Neurosurg Psychiatry* 1961;24:176-9.
- 5 Badal J. *Arch Ophthal* (Paris) 1888, 8:97 cited by Critchley.³

J M S PEARCE
304 Beverley Road, Anlaby
Hull HU10 7BG, UK