

BILATERAL TACTILE AGNOSIA: A CASE REPORT*

Jun Nakamura¹, Kunihiko Endo², Toshiko Sumida³ and Tsuneo Hasegawa⁴

(¹Department of Neuropsychology, Rehabilitation Unit, Izu Nirayama Rehabilitation Hospital, Nirayama-Cho, Shizuoka; ²Department of Rehabilitation, Tokyo Metropolitan Institute for Neuroscience, Tokyo; ³Department of Rehabilitation Medicine, Saku Central Hospital, Usuda-Machi, Nagano; ⁴Department of Internal Medicine, Izu Nirayama Rehabilitation Hospital, Japan)

ABSTRACT

This study reports a 64-year-old right-handed male who manifested bilateral tactile recognition deficits. They were diagnosed as bilateral tactile agnosia, since the patient showed difficulty in semantic association of objects despite preserved hylagnosia and morphognosis. The patient had a bilateral lesion in the subcortical region of the angular gyrus. The case reported by Endo et al. (1992) had a right hand tactile agnosia due to a subcortical lesion in the left angular gyrus. Our findings support Endo's hypothesis that tactile agnosia occurs when the somatosensory association cortex is disconnected from the semantic memory store located in the inferior temporal lobe by a subcortical lesion of the angular gyrus. We suggest that the extent of the lesion in the tactual-semantic pathway is related to the severity of tactile agnosia and the types of the tactile naming errors.

Key words: tactile agnosia.

INTRODUCTION

Tactile agnosia (tactile asymbolia) is defined as the inability to recognize objects in the absence of ahyagnosia or amorphognosia (Delay, 1935). A few cases of tactile agnosia have been reported, but only in one (Endo, Miyasaka, Makishita et al., 1992, Case 1) the syndrome has been clearly distinguished from a disturbance of tactile perception and from tactile aphasia (tactual-verbal disconnection syndrome, Geschwind, 1965; Beauvois, Saillant, Meininger et al., 1978).

Recently, two types of tactile agnosia, apperceptive type (Reed and Caselli, 1994; Reed, Caselli and Farah, 1996), and associative type (Endo et al., 1992; Platz, 1996), were reported. Endo et al. (1992) suggested that associative tactile agnosia appears when the somatosensory association cortex is disconnected from the semantic memory store located in the inferior temporal lobe by lesions of the arcuate fasciculus and the inferior longitudinal fasciculus running in the subcortical region of the angular gyrus. Platz (1996), on the contrary, interpreted

*Part of this manuscript was presented at the 14th (September 13, 1990) and the 20th (September 12, 1996) annual meeting of the Neuropsychology Association of Japan.

¹Now at Kakeyu Hospital Rehabilitation Center, Maruko-Machi, Nagano, Japan.

³Now at Sumida Clinic, Saku, Japan.

associative tactile agnosia as a modality-specific disconnection of the feature analysis system from the system combining features with form entity.

Here we report a case with bilateral associative tactile agnosia due to a bilateral lesion in the subcortical region of the angular gyrus. The purpose of this article is to reconsider the pathogenesis of tactile agnosia.

CASE REPORT

M.T. was a 64-year-old right-handed male. He had been a worker in a factory producing electric cells and had eight years of education. At the age of 50, he sustained a mild right hemiparesis and mild speech disturbances due to cerebral infarction. He recovered rapidly and returned to his job. Ever since he was on medication because of hypertension. On the afternoon of August 2, 1989, he suffered speech disturbance, vomiting and pallor. He was admitted to Saku Central Hospital. CT scan showed a left parieto-occipital hemorrhage. The next day he underwent a stereotactic aspiration of the intracerebral haematoma. On neurological examination after the operation, right homonymous hemianopia and very mild right hemiparesis were found. The Babinski sign was absent. Light touch and deep sensation were normal. His right hemiparesis was so mild that he had not difficulty to palpate objects. No deficit was present in the left limbs. Routine neuropsychological examination revealed moderate Wernicke's aphasia, severe acalculia, constructional apraxia, transient ideational apraxia, and transient right unilateral spatial neglect.

Detailed neuropsychological examination started two weeks after onset. The patient was alert and cooperated during the examination. WAIS verbal IQ was 74; performance IQ was 60. Recent memory was slightly impaired, while remote memory remained intact. Wernicke's aphasia recovered and changed to very mild anomic aphasia. The patient's visual naming disturbance became very mild, and he scored 17 out of 20 on the WAB (Western Aphasia Battery, Japanese edition) carried out on August 16. By contrast, his tactile naming disturbance was severe. The patient scored 6 out of 18 with either hand on the WAB executed on the same day. Auditory comprehension was mildly impaired, and he scored 6 out of 10 on the short-sentence comprehension task of the SLTA (Standard Language Test of Aphasia). He sometimes failed to understand long and grammatically complicated sentences, but word comprehension and everyday conversation were preserved. Agraphia and acalculia persisted. Finger agnosia and right-left disorientation became evident as his aphasia recovered. Right unilateral spatial neglect disappeared.

Neuropsychological Examination of Tactile Agnosia

The subject was seated in front of a table, where a wooden shield prevented him from seeing his hands and the test items. The table was covered with a thick sheet of soundproof cloth to eliminate auditory cues when objects were manipulated. For the data of normal subjects, see Endo et al. (1992).

A. Tactile Localization

Procedure. The examiner touched a point on the hand of the patient, then asked him to indicate the point by touching it with his other hand. The number of stimulation points were 23 on each hand.

Results. The patient correctly responded with either hand.

B. Two-point Discrimination

Procedure. The examiner touched the volar surface of the patient's index finger with a pair of plastic needles of a slide caliper (Takei Co. Ltd., esthesiometer of Spearman type) and asked him to respond "one or two". The distance of the needles was varied from 0 to

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات