



Commentary to: Garbled and Incoherent Text Messages Are a Sign of Acute Ischemic Stroke: A New Sign of Aphasia in the Era of Chat Applications

Hyungjong Park, MD

Department of Neurology, Keimyung University School of Medicine, Daegu, Korea

Aphasia can be defined as a loss or impairment of speech, comprehension, writing, and reading caused by dysfunction in specific brain regions.¹ The term aphasia is derived from the ancient Greek word *ἀφασία*, which means speechless.² This phenomenon caused by dysfunction in specific brain regions was first introduced in an Egyptian papyrus, which details speech problems in a patient with a traumatic brain injury of the temporal lobe.³

During the second half of the 19th century, aphasia became the intellectual and practical center of neurology, neuroscience, and psychology.¹ Wernicke⁴ and Lichtheim⁵, pioneers in aphasia, found several brain centers capable of performing complex language functions, and Wernicke was the first to propose a classification of aphasia based on the anatomical region corresponding to various aspects of language dysfunction.

Aphasia can be largely categorized into Broca's (non-fluent), Wernicke's (fluent), conduction, global, and transcortical aphasia.¹ To distinguish these types of aphasia, it is vital to check the patient's language capacity such as fluency, comprehension, and capacity of repetition. In addition, writing and

reading are also important alternative tools for checking language production and comprehension, respectively.¹ Thus, writing and reading impairments are known to be important signs of aphasia. Following the popularization of typing using a personal computer, typing has replaced writing.

Thus, a new type of language impairment called "dystypia" or "dystextia" has been regarded as an important sign of aphasia.⁶ According to the neuropsychological model of writing, there are three general processes involved: linguistic, transition, and motor execution. During typing especially, additional specific motor processes from the writing programming process are needed.⁷ Dystypia or dystextia is well recognized in patients with aphasia or agraphia, caused by damaged linguistic or motor execution processes. Currently, the specific lesion responsible for dystypia or dystextia has not been revealed; however, injury to the left posterior insula has been suggested.⁸

The article "Garbled and incoherent text message is a sign of acute ischemic stroke: the new sign of aphasia in the era of chat application" by Kobkitsuk-sakul et al.⁹ presents a case of dystextia and dystypia. Ischemic stroke was de-

Correspondence to:

Hyungjong Park, MD

Department of Neurology, Keimyung University School of Medicine, 1035 Dalgubeol-daero, Dalseo-gu, Daegu 42601, Korea

Tel: +82-53-258-7747

Fax: +82-53-258-4380

E-mail: hjpark209042@gmail.com

Received: November 25, 2020

Accepted: November 30, 2020

Copyright © 2021 Korean Society of Interventional Neuroradiology

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

pISSN 2093-9043
eISSN 2233-6273

tected by inappropriate responses during conversation using a chat application. Currently, conversations involving typing are prevalent not only among younger people but also among those older than 50 years; the latter are at a high risk of stroke. This important case report showed that dystypia and dystexia could serve as modern indicators of stroke.

Currently, with the popularization of mobile phones, communication is shifting from speaking to texting. This phenomenon was accelerated after the spread of chat applications for smart phones. In addition, the COVID-19 pandemic in recent times has led the installment of new laws; the World Health Organization recommends physical distancing of at least 1 meter from each other and avoiding spending time in crowded places or in groups. Thus, people have markedly decreased opportunities for face-to-face meetings or conversations, and phone chats are increasingly substituting for face-to-face conversations. Considering this pandemic period, dystypia or dystexia may be the most important sign for detecting aphasia. Thus, it is time to consider these important phenomena as acute signs of stroke.

Fund

This work has supported by the National Research Foundation of Korea (NRF) grant funded by the Korea government (MSIT) (No.2020R1G1A007100).

Ethics Statement

This type of study does not require approval from the IRB.

Conflicts of Interest

The author has no conflicts to disclose.

ORCID

Hyungjong Park: <https://orcid.org/0000-0002-6112-2939>

REFERENCES

1. Damasio AR. Aphasia. *N Engl J Med* 1992;326:531-539
2. Tesak J, Code C. Milestones in the history of aphasia: theories and protagonists, Hove: Psychology Press; 2008
3. McCrory PR, Berkovic SF. Concussion: the history of clinical and pathophysiological concepts and misconceptions. *Neurology* 2001;57:2283-2289
4. Wernicke C. [Das aphasische symptomensystem: eine psychologische studie auf anatomischer basis], Breslau: Cohn & Weigert; 1874 German
5. Lichtheim L. On aphasia. *Brain* 1885;7:433-484
6. Otsuki M, Soma Y, Arihiro S, Watanabe Y, Moriwaki H, Naritomi H. Dystypia: isolated typing impairment without aphasia, apraxia or visuospatial impairment. *Eur Neurol* 2002;47:136-140
7. Boyle M, Canter GJ. Neuropsychological analysis of a type-writing disturbance following cerebral damage. *Brain Lang* 1987;30:147-164
8. Sharma AK, Fridman S, Gleichgerricht E, Sposato LA. Dystextia and dystypia as modern stroke symptoms: a case series and literature review. *Clin Neurol Neurosurg* 2019;180:25-27
9. Kobkitsuksakul C, Sirilert B, Boongird A. Garbled and incoherent text messages are a sign of acute ischemic stroke: a new sign of aphasia in the era of chat applications. *Neurointervention* 2020;15:158-161.