

[LETTERS TO THE EDITOR]

Author's Reply: Involvement of the Abducens Nucleus Results in Adduction Impairment of the Contralateral Eye

Key words: abducens nerve palsy, peripheral facial nerve palsy, acute ischemic stroke, pons

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The Authors Reply We greatly appreciate the interest that Dr. Zen Kobayashi and Dr. Yoshiyuki Numasawa have shown in our article (1). We read with interest their Letter to the Editor (2). As they noted, the abducens nerve nucleus includes the motor neurons supplying the ipsilateral lateral rectus muscle, as well as the internuclear neurons sending axons to the contralateral oculomotor nucleus via the medial longitudinal fasciculus. Therefore, we agree that a lesion involving the abducens nucleus would theoretically cause both abduction impairment of the ipsilateral eye and adduction impairment of the contralateral eye; this would result in horizontal gaze palsy to the ipsilateral side (3, 4). However, in our case, other than peripheral facial nerve palsy, our patient have presented solely with abduction impairment of the left eye, showing no adduction impairment of the right eye; we therefore suspect that, in the case described in our previous article (1), the lesion involved the left abducens nerve fascicle immediately after it exited the left abducens nerve nucleus. Alternatively, the lesion may have caused incomplete damage to the left abducens nucleus, thereby resulting in dysfunction that was limited to the motor neurons. Indeed, in three previous case reports of combined abducens

and facial nerve palsy due to similar pontine lesions, the dysfunctional ocular movement in patients all manifested solely as abduction impairment of the ipsilateral eye (3-5). Nevertheless, we wish to emphasize that clinicians should be aware that combined abducens and facial nerve palsy strongly suggests a lesion in the pons, as the abducens and facial nerves run closely together in that location.

The authors state that they have no Conflict of Interest (COI).

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References

1. Tsukita K, Sakamaki-Tsukita H, Suenaga T. Combined abducens and peripheral facial nerve palsy. *Intern Med* **57**: 3223-3224, 2018.
2. Kobayashi Z, Numasawa Y. Involvement of the abducens nucleus results in adduction impairment of the contralateral eye. *Intern Med* **58**: 2273, 2019.
3. Antonio-Santos AA, Eggenberger ER. Concomitant sixth nerve and seventh nerve palsies. *J Neurol Neurosurg Psychiatry* **81**: 494, 2010.
4. Shimohata M, Watanabe Y, Tanaka H. A case of tegmental pontine infarction manifested combined peripheral facial and abducens nerve palsy. *Jpn J Stroke* **35**: 312-315, 2013.
5. Roh JK, Kim BK, Chung JM. Combined peripheral facial and abducens nerve palsy caused by caudal tegmental pontine infarction. *Eur Neurol* **41**: 99-102, 1999.

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