



# Dysarthria-clumsy Hand Syndrome due to Rostral Pontine Infarct

## *Rostral Pons İnfarktına Bağlı Gelişen Dizarthri-Beceriksiz El Sendromu*

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**Anahtar Kelimeler:** Dizarthri-beceriksiz el sendromu, pons, serebellar, patofizyoloji

Dear Editor,

A-65-year old male patient with a medical history of hypertension presented with symptoms of dysarthria and clumsiness in his right hand, which had abruptly started six hours prior to admission. A neurologic examination showed cerebellar dysarthria, mild paralysis in his right upper and lower limbs (prominent in the distal upper limb, Medical Research Council scale grade 4/5), and right-sided dysmetria (Video 1). Other examinations including sensory and cranial nerve examinations were normal. Cranial magnetic resonance imaging showed diffusion restriction in the left paramedian rostral pons (Figure 1). Further investigations including intracranial and extracranial computed tomography angiography, echocardiography, and electrocardiography were unremarkable. With the diagnosis of dysarthria-clumsy hand syndrome due to lacunar stroke, the patient was discharged on aspirin 300 mg therapy.

Dysarthria-clumsy hand syndrome is a well-known, but infrequent lacunar syndrome, which generally occurs due to a focal lesion in the basis pontis that damages corticofugal fibers, as well as adjacent pontine neurons or their axons (1,2). However, many lesion sites other than pons, including the internal capsule, corona radiata, and thalamus, have also been described as a cause of this clinical picture (3). Another interesting point may be that although the term 'clumsiness' has been acknowledged for many years, the actual nature of clumsiness is still a matter of debate for some authors (4). For instance, in an interesting report by Grandas et al. (4), a distinct patient with dysarthria-clumsy hand syndrome was illustrated

in which the clumsy hand was described as bradykinetic and the lesion site was subcortical white matter underlying supplementary motor area. Based on their report and literature data, Grandas et al. (4) suggested defining the clinical picture of dysarthria-clumsy hand syndrome in more detail such as 'dysarthria-ataxic hand' or 'dysarthria-bradykinetic hand', which would represent the phenomenology as well as the underlying pathophysiology more accurately. In our patient, the finger-nose test was disturbed in the right hand, suggesting that the impaired coordination of movements may be of cerebellar type. However, the contributory effect of paralysis of the right hand in the clinical presentation of clumsiness cannot be fully excluded.

In conclusion, herein, a patient with dysarthria-clumsy hand syndrome due to a pontine lacunar stroke is presented who had 'clumsiness' in the form cerebellar type ataxia. Contralateral ataxia in pontine strokes has been explained in the setting of injury of pontine neurons and their pontocerebellar axons (1). Detailed illustrations of these rare syndromes via neurologic examinations and neuroimaging findings may enable a more comprehensive understanding of underlying pathophysiology, which might differ individually with regard to the responsible anatomic regions and networks.

**Ethics**

**Informed Consent:** It was taken.

**Peer-review:** Internally peer-reviewed.

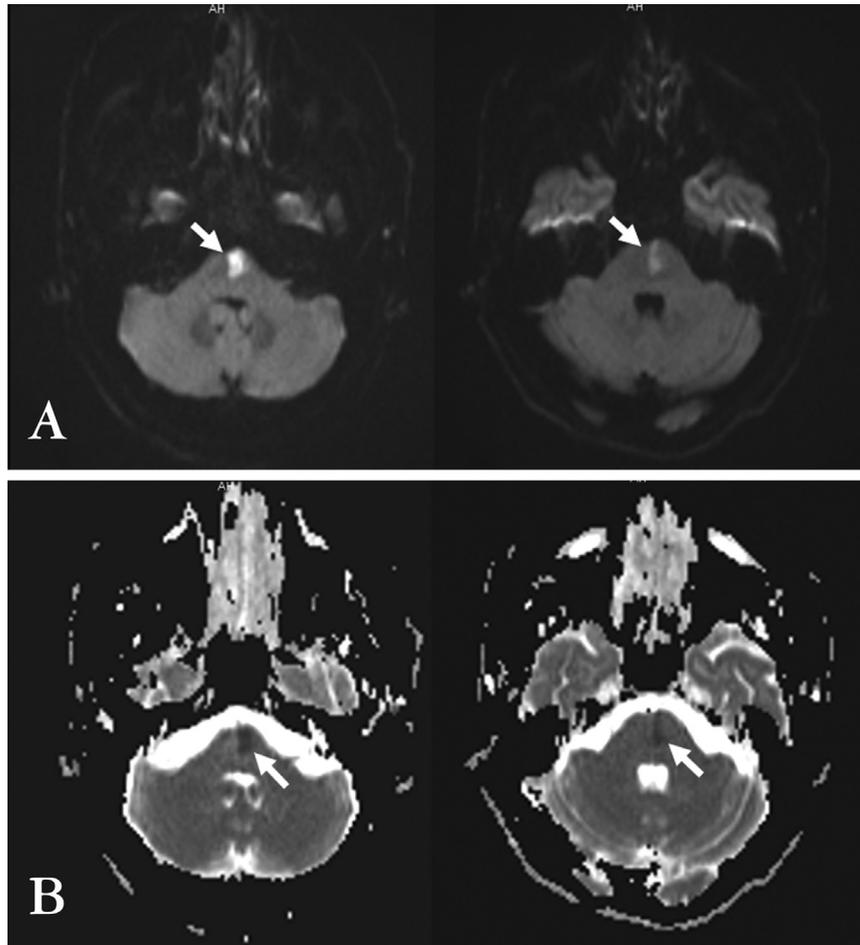
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**Figure 1.** Brain magnetic resonance imaging showing diffusion restriction in the left paramedian rostral pons (A; diffusion weighted imaging sequences, B; apparent diffusion coefficient sequences)

**Video 1.** Neurologic examination of the patient (recorded on the 4<sup>th</sup> day of stroke) showing impaired finger-nose test in the right hand showing prominently the impaired coordination of movements in cerebellar type.

<http://www.tjn.org.tr/jvi.aspx?pdire=tjn&plng=eng&un=TJN-60486&look4=>

## References

- Schmahmann JD, Ko R, MacMore J. The human basis pontis: motor syndromes and topographic organization. *Brain* 2004;127:1269-1291.
- Glass JD, Levey AI, Rothstein JD. The dysarthria-clumsy hand syndrome: a distinct clinical entity related to pontine infarction. *Ann Neurol* 1990;27:487-494.
- Arboix A, Bell Y, Garcia-Eroles L, Massons J, Comes E, Balcells M, Targa C. Clinical study of 35 patients with dysarthria-clumsy hand syndrome. *J Neurol Neurosurg Psychiatry* 2004;75:231-234.
- Grandas F, Villanueva JA, Mateo D, Gimenez-Roldan S. The dysarthria-clumsy hand syndrome: ataxic or bradykinetic hand? *Ann Neurol* 1991;30:430-431.