

**IMAGES IN EMERGENCY MEDICINE**

## Neurology

# Woman with sudden-onset speech difficulties

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## 1 | CASE DESCRIPTION

A 41-year-old female presented to our neurological emergency department with sudden onset speech difficulties, drooping of the right lower face, and impaired fine motor function in her right hand. Along with moderate aphasia and mild right brachiofacial weakness, the clinical examination revealed the presence of a Horner's syndrome on the left side with ptosis and miosis (Figure 1). These symptoms indicated an acute ischemic stroke in the territory of the left middle cerebral artery caused by dissection of the left internal carotid artery.



**FIGURE 1** Horner's syndrome on the left side with ptosis and miosis.

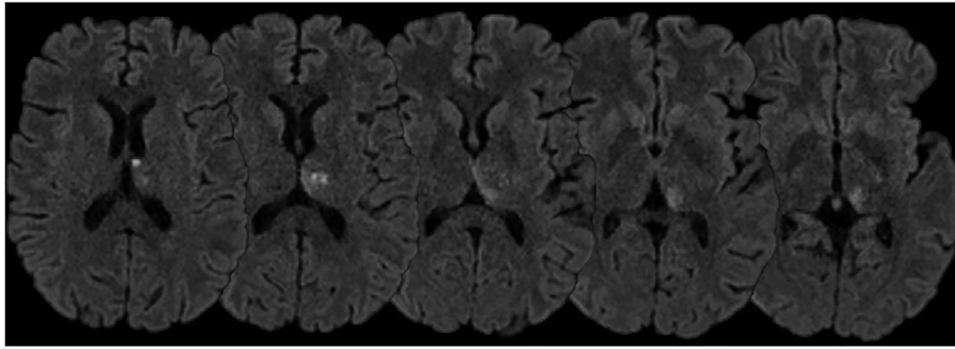
## 2 | DIAGNOSIS

### 2.1 | Acute left thalamic stroke

Remarkably, an acute ischemic stroke affecting the left thalamus was identified through magnetic resonance (MR) imaging examination (Figure 2). MR angiography did not reveal any evidence of internal carotid artery dissection. The patient received intravenous thrombolysis for stroke treatment. The neurological deficits began to improve within the next few days and the patient was discharged to neurological rehabilitation. The acute impairment of her language function can be interpreted as thalamic aphasia, a condition observed in thalamic stroke in the speech-dominant hemisphere. The severity and characteristics of thalamic aphasia vary depending on the specific location of the damage and are generally attributed to disruptions within the cortico-thalamic speech network.<sup>1</sup> While thalamic aphasia is well documented in medical literature, reports of Horner's syndrome occurring alongside thalamic strokes are rare. In such cases, it is typically associated with lesions located in the anterior or paramedian thalamus, which have connections to hypothalamic areas.<sup>2</sup>

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**FIGURE 2** Diffusion-weighted imaging showing acute left thalamic stroke.

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#### REFERENCES

1. Fritsch M, Rangus I, Nolte CH. Thalamic aphasia: a review. *Curr Neurol Neurosci Rep.* 2022;22:855-865.
2. Rossetti AO, Reichhart MD, Bogousslavsky J. Central Horner's syndrome with contralateral ataxic hemiparesis: a diencephalic alternate syndrome. *Neurology.* 2003;61:334-338.

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