Opalski syndrome with ataxic breathing in a young stroke patient: a rare case report

Aasim Ali[1], Labeeba Abdul Ghafoor[1], Numan Akram[1], Muhammad Shahzeb[1], Mukesh Kumar Sharma[2]*, Usama Saleem[3], Muhammad Abdullah Mushtaq[3], Taha Mehmood[3]

European Journal of Medical Case Reports
Volume 9(9):243–246
DOI: 10.24911/ejmcr.9-2340

ABSTRACT

Background: Opalski Syndrome is a rare variant of lateral medullary syndrome characterized by ipsilateral hemiparesis due to medullary infarction extending into the cervical spinal cord.

Case Presentation: A 30-year-old Asian male with newly diagnosed diabetes presented with vomiting, vertigo, dysphagia, ataxic breathing, and ipsilateral facial and contralateral sensory loss. Subsequently, he developed right-sided hemiplegia. He had an ataxic respiratory pattern suggesting medullary involvement. Magnetic resonance imaging brain and cervical spine Fluid-Attenuated Inversion Recovery (FLAIR) revealed an infarction in the right medulla extending into the ipsilateral spinal cord. Stroke workup for young patients yielded negative results. A computed tomography angiography brain was done to rule out vertebro-basilar dissection. Workup for stroke in the young was unremarkable. In addition to anti-platelets and statin; frequent blood gas analysis was performed because of his abnormal breathing pattern. Tissue plasminogen activator was not administered as the patient presented late in our stroke center, and the initial NIHSS score was 4.

Conclusion: This case emphasizes that Opalski syndrome should be considered in young stroke patients presenting with lateral medullary features and ipsilateral hemiparesis. Recognition of ataxic breathing as a clinical clue to medullary involvement can guide timely diagnosis and management.

Keywords: Opalski Syndrome, medullary infarct, hemiplegia, brainstem stroke, stroke in young.

Type of Article: CASE REPORT **Specialty:** Neurology

Correspondence to: Mukesh Kumar Sharma
*Internal Medicine Department Dhankuta District Hospital, Dhankuta, Nepal.
Email: Mukeshsharmakumar95@gmail.com
Full list of author information is available at the end of the article.

Received: 22 August 2025
Revised (1): 24 September 2025
Accepted: 31 October 2025

Introduction

Opalski Syndrome is a rare variant of lateral medullary (Wallenberg) syndrome, characterized by infarction of the dorsolateral medulla with extension into the ipsilateral cervical spinal cord. This additional involvement of the corticospinal tract *after pyramidal decussation* explains the unusual presentation of ipsilateral hemiplegia, in contrast to the classical lateral medullary syndrome, where motor pathways are usually spared [1]. Along with this, patients commonly exhibit contralateral hemisensory loss and cranial nerve IX and X dysfunction, often leading to dysphagia, dysarthria, or abnormal respiratory patterns.

First described by Opalski [1], this condition can be difficult to distinguish clinically from dual brainstem and spinal cord infarcts. The recognition of its distinctive symptom combination, however, provides important diagnostic clues. Moreover, patients may face significant complications such as recurrent aspiration, persistent dysphagia, or autonomic instability, which underscores the importance of early detection and multidisciplinary management. High-resolution Magnetic resonance imaging (MRI), particularly FLAIR imaging, plays a critical role in confirming the diagnosis by demonstrating medullary infarction and its extension into the cervical cord [2].

We present a rare case of Opalski Syndrome in a young male with no past identifiable risk factors for stroke and abnormal respiratory breathing pattern, highlighting the importance of detailed clinical evaluation and targeted imaging in atypical brainstem syndromes.

Case Presentation

A 30-year-old Asian male, recently diagnosed with diabetes mellitus, presented with neurological symptoms. There was no significant past medical or surgical history, no known drug allergies, and no substance use. Family history was unremarkable.

The patient reported dysphagia, nasal regurgitation, and right-sided facial numbness for the past 36 hours. He also described breathing difficulty with an ataxic respiratory pattern, suggesting possible involvement of medullary respiratory centers.

Medical history and risk factors

Newly diagnosed diabetes mellitus, but no history of hypertension, cardiovascular disease, or illicit substance abuse. No prior cerebrovascular events and no family history of stroke or autoimmune disorders were there.

On neurological examination

His initial vitals were in normal range except abnormal respiratory pattern with fluctuating respiratory rate. On Neurologic examination, the uvula deviated to the left, and gag reflex diminished (right > left), indicating cranial nerve IX and X involvement. Contralateral (left-sided) loss of pain and temperature sensation, ataxic breathing pattern noted, and initially, no motor weakness.

Investigations

- Computed tomography (CT) Brain (Non-contrast): Normal.
- MRI Brain (FLAIR): FLAIR hyperintensity in the right dorsolateral medulla (red arrow) consistent with infarction, as shown in Figure 1, with extension into the cervical spinal cord shown in Figure 2.
- CT Angiography: No vertebrobasilar dissection or occlusion.
- ECG/Echocardiogram: No cardioembolic source
- Routine labs: Normal renal, liver, lipid, and coagulation profiles.

Stroke in young workup

Normal homocysteine, negative autoimmune and antiphospholipid panels, negative toxicology screen, and Holter monitoring.

Interventions

The patient was started on:

Dual antiplatelet therapy: aspirin 75 mg + clopidogrel 75 mg daily for 1 month, then continued on single antiplatelet therapy

Rosuvastatin 40 mg at bedtime

Frequent arterial blood gas monitoring due to abnormal respiratory pattern.

Glycemic control measures and referral to a medical specialist.

Outcome and follow-up

By Day 2, the patient developed profound right-sided hemiplegia (0/5 power in both right upper and lower limbs), hypotonia, and areflexia.

Now differential diagnosis

- New Left internal capsule infarct (considered due to hemiplegia but excluded on MRI).
- Extension of the original infarction into ipsilateral spinal cord (Opalski syndrome).

Imaging confirmed right medullary infarction with spinal extension, explaining the same-sided hemiparesis. Therefore, the final diagnosis of Opalski syndrome with ataxic respiratory pattern was established. Neurological status later stabilized under treatment. Breathing pattern improved with monitoring. Although the patient had an ataxic respiratory breathing pattern requiring frequent monitoring but he did not require oxygen therapy or ventilatory support during hospitalization. The patient was discharged on anti-platelet therapy, statin, and glycemic management, with planned neurological and metabolic follow-up.

Discussion and Conclusion

This case highlights a rare but important diagnostic entity – Opalski syndrome – which can be mistaken for multifocal stroke because of its unusual clinical presentation. The

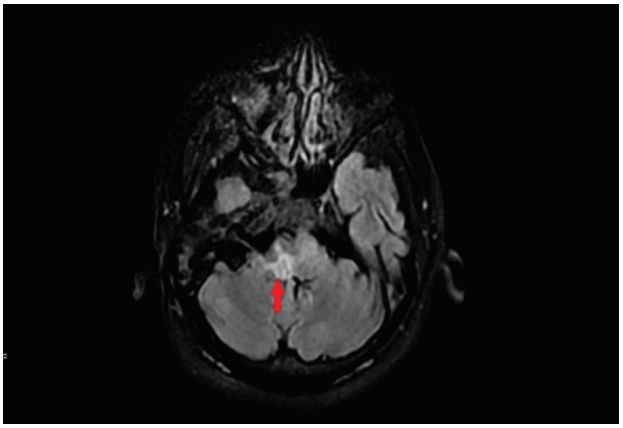

Figure 1. *FLAIR hyperintensity in right dorsolateral medulla (red arrow) consistent with infarction.*

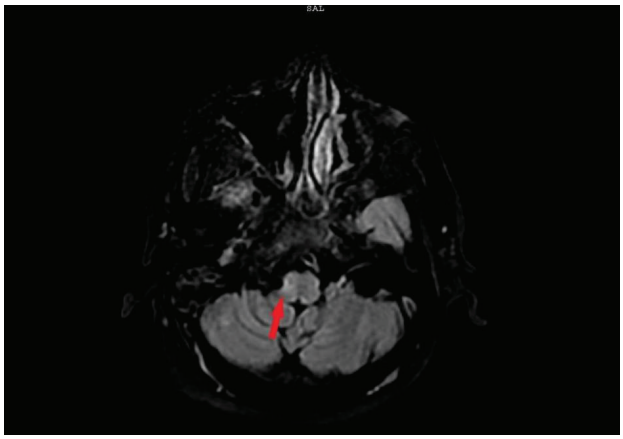

Figure 2. *Same Hyperintensity of medulla oblongata extending into cervical spinal cord (Red arrow).*

defining feature is ipsilateral hemiparesis caused by caudal extension of a lateral medullary infarct into the corticospinal tract below the pyramidal decussation [1]. This contrasts with classic Wallenberg syndrome, where motor pathways are spared, and underscores the need for careful clinical localization [1,2].

In our patient, the coexistence of bulbar symptoms, contralateral sensory loss, and ipsilateral hemiparesis could have suggested two separate lesions. However, targeted MRI confirmed that a single medullary infarct with spinal extension accounted for all findings, preventing unnecessary investigations for alternative etiologies such as embolic stroke, vasculitis, or demyelinating disease [3-5].

A distinctive and clinically significant feature in this patient was the presence of respiratory pattern abnormalities, characterized by an ataxic breathing rhythm. This likely reflected the involvement of medullary respiratory centers. Such breathing disturbances are rarely emphasized in descriptions of brainstem strokes but can serve as an important clue to the extent of medullary involvement. In our case, recognition of this abnormal breathing pattern prompted close respiratory monitoring and guided timely supportive care, which contributed to a favorable outcome.

Another key consideration is the presence of new-onset diabetes mellitus, which is increasingly recognized as a risk factor for ischemic stroke even in young adults. Diabetes contributes to endothelial dysfunction, accelerates atherosclerosis, and amplifies other vascular risk factors, thereby lowering the threshold for cerebrovascular events at an earlier age. Its detection in this patient highlights the importance of metabolic evaluation in all young stroke cases.

Management remains consistent with other ischemic strokes: antiplatelet therapy, control of vascular risk factors, and structured rehabilitation form the mainstay of treatment. Prognosis is generally favorable with timely intervention and effective secondary prevention [6].

Limitations

A potential limitation of this report is that advanced etiological testing – such as genetic thrombophilia screening or detailed cardiac imaging – was not performed. While the clinical and radiological findings were sufficient to establish the diagnosis, such investigations could have provided additional insights into possible underlying mechanisms.

In conclusion, this case emphasizes the need for vigilance in recognizing Opalski syndrome in young patients with atypical stroke presentations. Careful neurological assessment, consideration of emerging vascular risk factors like diabetes, recognition of respiratory abnormalities, and targeted neuroimaging are essential for timely and accurate diagnosis.

What's new?

To the best of the author's knowledge, this is among the few cases of Opalski syndrome with contemporaneous documentation of ataxic respiratory pattern at presentation, directly correlating with medullary rhythm-generator involvement. In a young adult with newly diagnosed diabetes and otherwise negative stroke-in-the-young workup, this case underscores the need for vertebral–PICA vascular imaging even when initial CT is normal.

Acknowledgments

The authors thank the patient for consenting to this case report and the multi-specialty teams for their support in the early detection and management of the case.

List of Abbreviations

CT	Computed tomography
MRI	Magnetic resonance imaging
ANA	Anti Nuclear Antibodies
ENA and Anti dDNA antibodies	Anti double standard DNA antibodies

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

Funding

None.

Consent for publication

Due permission was obtained from the patient to publish the case.

Ethical approval

Not required.

Author details

Aasim Ali[1], Labeeba Abdul Ghafoor[1], Numan Akram[1], Muhammad Shahzeb[1], Mukesh Kumar Sharma[2], Usama Saleem[3], Muhammad Abdullah Mushtaq[3], Taha Mehmood[3]

1. Neurology Department, Allied Hospital Faisalabad, Faislabad Medical University, Faisalabad, Pakistan
2. Internal Medicine Department Dhankuta District Hospital, Dhankuta, Nepal
3. Internal Medicine Department, Allied Hospital Faisalabad, Faisalabad, Pakistan

References

1. Opalski A. Les syndromes alternés du bulbe rachidien. Rev Neurol (Paris). 1946;78:5–20.
2. Kim JS. Pure lateral medullary infarction: clinical-radiological correlation of 130 acute, consecutive patients. Brain. 2003;126(Pt 8):1864–72.
3. Fisher CM. Some neurovascular syndromes produced by brain stem lesions. Neurology. 1965;15(8):716–25.
4. Bogousslavsky J, Caplan LR. Stroke syndromes. 2nd ed. Cambridge, MA: Cambridge University Press; 2001. https://doi.org/10.1017/CBO9780511586521
5. Kang DW, Chu K, Yoon BW, Song IC, Chang KH, Roh JK. Diffusion-weighted imaging in patients with subcortical infarction. Stroke. 2000;31(7):1541–7.

6. Kernan WN, Ovbiagele B, Black HR, Bravata DM, Chimowitz MI, Ezekowitz MD, et al.; American Heart Association Stroke Council, Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, and Council on Peripheral Vascular Disease. Guidelines for the prevention of stroke in patients with stroke and transient ischemic attack: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2014;45(7):2160–236.

Summary of the Case

1	Age, Sex	30 years old, male
2	Final diagnosis	Opalski Syndrome (variant of Lateral Medullary Syndrome)
3	Symptoms	Dysphagia, nasal regurgitation, Right facial numbness, contralateral loss of pain & temperature, ataxic breathing, right-sided hemiplegia
4	Medications	Aspirin 75 mg daily, Clopidogrel 75 mg daily (1 month, then single antiplatelet), Rosuvastatin 40 mg at bedtime
5	Clinical procedure	Neuroimaging (CT, MRI, CTA), Stroke in young workup, Respiratory monitoring, Glycemic control
6	Specialty	Neurology