Introduction: Isolated vestibular syndrome from dorsal medullary infarcts typically presents with dizziness/vertigo, tinnitus, and ocular motor abnormalities. The dorsal medulla contains structures responsible for transmitting vestibular and ocular signals. It is imperative to distinguish isolated dorsal medullary infarcts from peripheral vestibulopathy to avoid devastating consequences, as the diagnosis can be challenging. We describe a case of a patient with vascular risk factors presenting with refractory vomiting before being diagnosed with an acute dorsal medullary stroke.

Case description:
A 41-year-old male with a past medical history of hypertension and uncontrolled diabetes presented to the emergency department with a severe occipital headache and persistent nausea and vomiting lasting for one day. He had at least a dozen episodes of vomiting. The headache improved, but the vomiting persisted. In the emergency, the patient was hypertensive with a blood pressure of 170/100 mm Hg. Due to significant vomiting, a complete neurological examination was deferred. A stat CT scan brain did not show hemorrhage, mass, or acute infarct. Blood work revealed unremarkable cell counts, serum lipase, and liver function tests. Hemoglobin A1c was elevated at 10.9 %. Murphy's sign was negative. Initially, his presentation was thought to be due to viral gastroenteritis. CT scan abdomen and pelvis were negative for any acute intra-abdominal pathology. The urine drug screen was clear. Intravenous ondansetron and prochlorperazine were ordered for nausea, and meclizine for mild dizziness. The vomiting resolved, but the next day, he started having severe dizziness and vertigo. Detailed examination revealed right eye horizontal diplopia, decreased right-sided facial sensation, rightward swaying on Romberg test, but negative HINTS exam, intact hearing, intact finger nose testing, and bilateral heel-to-shin testing with no dysmetria, concerning for a right-sided stroke. MRI Brain was ordered that showed restricted diffusion along the right dorsal medulla suggestive of an acute/subacute right dorsal medullary infarct. CTA brain showed normal right posterior inferior cerebellar artery with no acute stenosis or large vessel occlusion. Transthoracic echocardiogram showed normal ejection fraction and valvular function. He was started on a high-intensity statin and aspirin and counseled on aggressive risk factor modification. His neurological deficits improved over the next few days, and he was discharged to rehab.

Discussion:
Bedside neurological evaluation is crucial for early recognition of isolated acute vestibular syndromes as patients can progress to cranial or sensorimotor impairments. The diagnosis is challenging as very few patients with vertigo and dizziness have additional focal neurologic abnormalities. Physicians must be aware of the atypical presentation of these syndromes.