

Vertebrobasilar Insufficiency

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1 Overview

Vertebrobasilar insufficiency occurs when both [basilar arteries](#) are occluded.

2 Clinical Manifestations

The clinical manifestations of VBI are difficult to distinguish from other causes of brainstem ischemia (see later) and can include any or all of the following:

- Dizziness¹
- Visual disturbance¹
- Drop attacks (a sudden loss of postural tone without loss of consciousness)¹
- Ataxia¹
- Dysarthria¹

- Dysphagia¹
- Hemiplegia¹
- Hemianesthesia¹
- Nausea¹
- Ringing in the ears¹

Note

Terret et al. (2001) suggested the mnemonic “**5D’s And 3N’s**” for remembering the common signs and symptoms of VBI¹.

- 5D’s: Dizziness, Drop attack, Diplopia, Dysarthria, Dysphagia¹
- 1xA: Ataxia of gait¹
- 3N’s: Nausea, Numbness, Nystagmus¹

There is no single consistent pattern for VBI¹. The most common presenting symptoms are vertigo, nausea, and headache that can be subtle, intermittent, and even chronic in nature¹.

2.1 Head & Neck Pain

2.2 Vertigo & Dizziness

Dizziness is the **most common** symptom of VBI, but is rarely found in isolation¹. The dutton textbook mentions vertigo but does not provide any sources or explanation as to why this was mentioned¹.

2.3 Headache

A headache due to VBI commonly manifests with a gradual onset². The headache generally has a unilateral occipital or frontotemporal pattern^{1,2}.

The headache is typically described as gradual onset that is mostly unilateral and involves the frontotemporal region

2.4 Other Symptoms

These signs and symptoms have been linked directly or indirectly to VBI:

- Wallenberg, horner, and similar syndromes¹
- Bilateral or Quadrilateral parasthesia¹
- Hemiparasthesia¹
- Scotoma (a permanent or temporary area of depressed or absent vision)¹

- Periodic loss of consciousness (LOC)¹
- Lip/perioral anesthesia¹
- Hemifacial paralysis/anesthesia¹
- Hyperreflexia¹
- (+) Babinski, Hoffman, or Oppenheim signs¹
- Clonus¹
- Gait ataxia¹
- Dysphasia¹

3 Tests

The gold standard test for VBI is conventional angiography¹

3.1 Physical tests

Vertebrobasilar Insufficiency Test

4 DDX

Spontaneous intracranial hypotension is a common DDX for VBI, but differs since it generally presents with a gradual onset orthostatic headache near the occipital regions² These headaches are orthostatic since the low volume of CSF d/t leakage allows the brain to displace downwards when standing². This displacement causes the headache symptoms to worsen when standing and to relieve when laying down².

1. Dutton M. *Dutton's Orthopaedic Examination, Evaluation, and Intervention*. Fifth edition. McGraw Hill Education; 2020.
2. Chen YC, Ou YH, Chang MC, Chen WL, Lin CM. Vertebral artery dissection stroke in evolution presented with postural headache as initial manifestation. *Neurology International*. 2018;10(2). doi:[10.4081/ni.2018.7694](https://doi.org/10.4081/ni.2018.7694)