

Primary spontaneous mesencephalic hemorrhage

see also [Thalamo-mesencephalic hemorrhage](#).

[Primary tectal mesencephalic hemorrhage](#).

Non-traumatic, spontaneous primary mesencephalic hemorrhage is extremely rare. Of the few reported cases to date, most were associated with [blood dyscrasias](#), [vascular malformations](#) or [hypertension](#) ^{1) 2) 3) 4) 5) 6)}.

[Midbrain hemorrhage](#) has also been seen in a small group of normotensive patients with negative [angiograms](#) and normal laboratory studies ⁷⁾.

In addition, a more clinically benign form of [non-aneurysmal subarachnoid hemorrhage](#) with a [perimesencephalic](#) focus has been described ⁸⁾.

[primary mesencephalic hemorrhage](#) is a distinct clinicopathological entity with a wide clinical and etiological spectrum. It differs from primary [thalamic hemorrhage](#), [pontine hemorrhage](#) and associated [intraparenchymal hemorrhages](#) by a number of phenomenological, prognostic and neuroimaging features ⁹⁾.

The diagnosis should be considered in the premonitory or secondary phase of any neurovascular illness in which [mesencephalic syndromes](#) and even subtle evidence of raised intracranial pressure are present. When such cases are confirmed by screening neuroimaging studies, an immediate inquiry into potentially remediable, occult predisposing factors should be undertaken.

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Case reports

A 62-year-old woman presented with gait instability and dysarthria. MRI and angiography revealed a diffuse vascular network involving the tectum and cerebellar vermis with intermingled brain

parenchyma. This lesion had no dominant feeder, high-flow arteriovenous shunt, flow-related aneurysm or highly dilated veins on angiogram. These findings were consistent with a diagnosis of CPA. During follow-up, she developed progressive gait instability and eye movement abnormalities, but no remarkable change was detected on the repeated MRI and angiography. Nine years later, she died of mesencephalic hemorrhage originating from the CPA. To the best of our knowledge, this is the first description of a patient with CPA who died as a result of the initial hemorrhage. It is important to recognize that a part of CPAs is aggressive and can be more vulnerable to critical hemorrhage ¹⁰⁾.

The case histories of two patients with clinically diverse forms of the very rare entity primary, spontaneous mesencephalic hemorrhage are presented. Each exhibited characteristic mesencephalic signs and neuroimaging profiles. However, both patients differed markedly in their predisposing factors, state of arousal, memory, temporal course and functional residua. One patient was unique in displaying a normal level of alertness throughout his clinical course and an isolated retrograde amnesia. The latter sign suggests a role for mesencephalic reticular activation in long-term retrieval and illustrates the differential effects of a subtle activation deficit on memory and arousal. These findings broaden the distinctive clinico-anatomical profile of primary, spontaneous mesencephalic hemorrhage ¹¹⁾.

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The first case was reported in 1949.

The clinical diagnosis of a brainstem tumor was changed to hemorrhage after the surgery. Between 1978 and 1991, more than 20 additional patients were reported in the literature

Spontaneous (nontraumatic) midbrain hemorrhage (SMH) is an uncommon condition whose diagnosis is greatly assisted by the use of [cranial computerized tomography](#). Of 18 cases described in the English language literature, only two were diagnosed without the aid of CT.

Fingerote et al. report five cases of SMH in five normotensive patients. [Vertical gaze palsy](#) were noted in four patients, headache in four, pupillary dysfunction in four, mild hemiplegia in two, unilateral ataxia in two, and unilateral asterix in one. The diagnosis of SMH had not been considered before CT scanning in any of these patients. All patients had partial to complete recovery. Cerebral angiography in each case showed no abnormalities in the area of the hemorrhage ¹²⁾.

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