CONDITION

Stroke

Learn what the term apoplexy means, how it relates to stroke and pituitary apoplexy, which symptoms need emergency care, and how these conditions are diagnosed and treated.

WHAT IT IS
Sudden brain dysfunction from blocked blood flow or bleeding

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
One-sided weakness, facial drooping, speech difficulty, sudden vision loss

WHAT CAUSES IT
Blood clot or vessel rupture

HOW IT IS DIAGNOSED
Brain CT or MRI

MAIN TREATMENT
Emergency clot treatment or bleeding control

CAN IT BE CURED?
Sometimes - effects can remain persistent

IS IT AN EMERGENCY?
Yes - any new stroke signs

LONG-TERM OUTLOOK
Variable, with possible lasting disability and recurrence

Overview

Apoplexy is an older medical term for a sudden loss of brain function, often with unconsciousness or paralysis. Historically, "cerebral apoplexy" usually referred to what is now called a stroke , especially a stroke caused by bleeding in the brain.

Doctors rarely use apoplexy by itself today because it does not identify the exact cause. Modern diagnosis depends on whether brain tissue has lost its blood supply, bleeding has occurred, or another problem is responsible.

The word still appears in the name pituitary apoplexy . This is a specific and potentially life-threatening condition caused by sudden bleeding or loss of blood flow within the pituitary gland, often in a previously unrecognized pituitary tumor. The pituitary is a small gland at the

base of the brain that helps control hormones involved in stress response, thyroid function, reproduction, growth, and fluid balance.

In other settings, apoplexy may be used with the name of an organ to describe sudden bleeding or tissue damage. For example, older records may mention ovarian or adrenal apoplexy. The organ named and the surrounding medical information are important for understanding what the term means.

Both acute stroke and pituitary apoplexy require prompt medical assessment. Treatment and likely outcomes differ, so imaging, blood tests, and a clinical examination are needed to establish the diagnosis.

Symptoms

Symptoms depend on what a clinician means by apoplexy . Sudden neurological symptoms should always be treated as an emergency rather than watched at home.

Possible stroke symptoms include:

A useful way to remember common stroke signs is FAST : face drooping, arm weakness, speech difficulty, and time to call emergency services. Some strokes cause other symptoms, including isolated vision loss, dizziness with poor coordination, or weakness in a leg.

Pituitary apoplexy often causes a sudden, severe headache. The pain may be centered behind the eyes or across the forehead, although its location varies. Other possible symptoms include:

Low blood pressure, vomiting, weakness, or confusion may occur if the damaged pituitary cannot signal the adrenal glands to make enough cortisol. Cortisol is a hormone needed to support blood pressure and the body's response to illness or injury.

Call emergency services immediately for new stroke signs, a sudden severe headache, sudden vision loss, a seizure, fainting, or a rapid change in alertness. Note when the person was last known to be well. Do not drive yourself if emergency symptoms are present.

- Sudden weakness or numbness, especially on one side of the face or body
- Facial drooping
- New difficulty speaking, understanding speech, reading, or writing
- Sudden loss of vision, blurred vision, or double vision
- New trouble walking, loss of balance, or poor coordination
- A sudden, severe headache, particularly when bleeding in the brain is possible

- Confusion, unusual sleepiness, a seizure, or loss of consciousness
- Reduced vision, blurred vision, or double vision
- Difficulty moving one or both eyes
- Drooping of an eyelid
- Nausea and vomiting
- Sensitivity to light or neck stiffness
- Confusion, severe drowsiness, or loss of consciousness
- Low blood pressure, faintness, or marked weakness
- Fever or symptoms that resemble meningitis

Causes and risk factors

A stroke may be ischemic or hemorrhagic. An ischemic stroke happens when a blood clot blocks blood flow to part of the brain. A hemorrhagic stroke happens when a blood vessel breaks and blood collects in or around the brain. Brain cells can be injured quickly in either situation.

Stroke risk is influenced by several health and lifestyle factors. Important factors include high blood pressure, atrial fibrillation and other heart conditions, diabetes, high cholesterol, smoking, and previous stroke or transient ischemic attack. A transient ischemic attack, sometimes called a TIA, causes temporary stroke-like symptoms and is a warning that requires urgent assessment.

Age and family history can also affect stroke risk. Certain blood vessel disorders, blood-clotting conditions, and medicines that reduce clotting may influence the type or likelihood of bleeding. Having a risk factor does not mean that a person will have a stroke.

Pituitary apoplexy usually develops within a pituitary adenoma. An adenoma is generally a noncancerous growth. Many pituitary adenomas cause no symptoms and may not have been diagnosed before the emergency.

Sometimes pituitary apoplexy occurs after major surgery, a serious illness, head injury, pregnancy or the period after delivery, or a rapid change in blood pressure. Anticoagulant treatment, which reduces the blood's ability to clot, has also been associated with some cases. Certain tests or treatments that strongly stimulate the pituitary may rarely precede it. In many people, no clear trigger is found.

A severe headache alone cannot show whether someone has a stroke, pituitary apoplexy,

migraine, bleeding around the brain, or another condition. Similar symptoms can have very different causes.

Diagnosis

Emergency evaluation begins with the timing and pattern of symptoms, medical history, medicines, vital signs, and a neurological examination. Clinicians may check strength, sensation, speech, vision, eye movements, coordination, and level of alertness.

When stroke is suspected, a brain CT scan is commonly performed quickly to look for bleeding. CT angiography may be used to examine the arteries of the head and neck. MRI can identify many areas of brain injury in greater detail, although the most appropriate initial scan depends on the situation and available resources.

Blood tests may assess blood sugar, blood counts, kidney function, electrolytes, and clotting. An electrocardiogram checks the heart's rhythm. Further heart or blood vessel testing may be performed after the immediate emergency has been addressed.

Pituitary apoplexy is usually evaluated with MRI focused on the pituitary area. A CT scan may be obtained first during an emergency, but it may not show pituitary changes as clearly as MRI.

Blood tests are used to check pituitary-controlled hormones and the body's salt and fluid balance. Cortisol is particularly important because sudden cortisol deficiency can cause dangerously low blood pressure. Clinicians may also test thyroid-related hormones, prolactin, and hormones related to reproduction or growth.

An eye examination may assess visual sharpness, side vision, pupils, and eye movements. Specialists in endocrinology, neurosurgery, neurology, and ophthalmology may take part in the evaluation.

Treatment and management

Treatment depends on the confirmed cause, the time symptoms began, imaging results, and the person's overall condition.

For some ischemic strokes, clinicians may use medicine that dissolves a blood clot when treatment can be given within an appropriate time window and it is considered safe. Some people with a blockage in a large brain artery may be candidates for mechanical thrombectomy. In this procedure, a specialist passes a device through a blood vessel to remove the clot.

Hemorrhagic stroke treatment focuses on limiting further bleeding and controlling its effects. This may include carefully managing blood pressure, reversing the effects of anticoagulant medicines when appropriate, treating increased pressure inside the skull, and consulting a neurosurgeon. Some types of bleeding require a procedure or surgery, while others are managed with close monitoring and supportive care.

Stroke rehabilitation may begin in the hospital. Physical therapy, occupational therapy, and speech-language therapy can help with movement, daily activities, communication, swallowing, and thinking skills.

For suspected pituitary apoplexy, clinicians first stabilize breathing, circulation, blood pressure, and fluid balance. Corticosteroid treatment may be given urgently when cortisol deficiency is suspected, especially if the person has low blood pressure, reduced consciousness, or other signs of serious illness. Corticosteroids like prednisone or hydrocortisone replace the hormone effect the body may be unable to produce.

Some people need surgery to relieve pressure around the pituitary, optic nerves, or nearby structures. Surgery is more likely to be considered when there is severe or worsening visual loss, major problems with eye movements, or declining consciousness.

Other people can be managed without immediate surgery if their neurological and visual findings are stable. This approach still requires close observation, repeated vision and hormone assessments, and access to specialist care. It does not mean the condition is minor.

Long-term treatment may include hormone replacement if pituitary function does not recover. The exact hormones needed are determined by laboratory testing and specialist follow-up.

Complications

Stroke complications depend on the location and amount of brain injury. Possible effects include persistent weakness, speech or language problems, swallowing difficulty, vision loss, memory changes, depression, seizures, and reduced independence. Swallowing problems can allow food or fluid to enter the lungs, which may lead to pneumonia.

A person who has had a stroke is also at increased risk of another stroke. Follow-up care focuses on identifying the cause and managing risks such as high blood pressure, abnormal heart rhythm, diabetes, smoking, or cholesterol problems.

Pituitary apoplexy can damage vision or the nerves that control eye movement. It may also cause partial or complete loss of pituitary function. This is called hypopituitarism .

Hormone deficiencies may affect cortisol production, thyroid function, menstrual cycles, fertility, testosterone levels, energy, and fluid balance. Some deficiencies are temporary, while

others require long-term replacement. Severe untreated cortisol deficiency can lead to adrenal crisis, with low blood pressure, vomiting, confusion, and circulatory collapse.

Even after treatment, pituitary tissue or a remaining tumor may need continued monitoring. Further growth or another episode of bleeding is possible, although individual risk varies.

Follow up

After a stroke, follow-up may include a primary care clinician, neurologist, rehabilitation team, and other specialists. The care plan may address blood pressure, heart rhythm, cholesterol, diabetes, physical activity, smoking, sleep, mood, and medicines intended to prevent another stroke.

Seek emergency care for any new or returning stroke symptoms, even if they improve within minutes. Temporary symptoms can represent a TIA and should not wait for a routine appointment.

After pituitary apoplexy, follow-up usually includes endocrinology review, repeat hormone testing, and pituitary imaging. Formal visual-field testing may be needed if vision was affected. Hormone levels can change during recovery, so treatment may need adjustment by the clinical team.

People taking replacement corticosteroids should receive clear instructions from their care team about illness, missed medicine, emergency identification, and when urgent treatment is needed. These plans are individualized.

Contact a clinician promptly for increasing thirst and urination, persistent fatigue, dizziness, unexplained nausea, menstrual changes, sexual-function changes, or symptoms of low thyroid function. These concerns generally need timely medical review but are not always emergencies.

Sudden vision change, severe headache, fainting, confusion, seizure, new weakness, or difficulty speaking requires emergency assessment.

Sources

- Greenberg SM, Ziai WC, Cordonnier C, et al. "2022 Guideline for the Management of Patients With Spontaneous Intracerebral Hemorrhage." Stroke . 2022;53(7):e282-e361. American Heart Association and American Stroke Association.

- Powers WJ, Rabinstein AA, Ackerson T, et al. "Guidelines for the Early Management of Patients With Acute Ischemic Stroke: 2019 Update." Stroke . 2019;50(12):e344-e418. American Heart Association and American Stroke Association.
- National Institute of Neurological Disorders and Stroke. "Stroke." National Institutes of Health. Accessed March 8, 2025.
- Baldeweg SE, Vanderpump M, Drake W, et al. "Society for Endocrinology Endocrine Emergency Guidance: Emergency Management of Pituitary Apoplexy in Adult Patients." Endocrine Connections . 2016;5(5):G12-G15.
- Rajasekaran S, Vanderpump M, Baldeweg S, et al. "UK Guidelines for the Management of Pituitary Apoplexy." Clinical Endocrinology . 2011;74(1):9-20.
- Briet C, Salenave S, Bonneville JF, Laws ER, Chanson P. "Pituitary Apoplexy." Endocrine Reviews . 2015;36(6):622-645.