

Ask Dr. Lane

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What is a “brain attack?”

A brain attack is a term coined by neurologists to describe strokes or cerebral vascular accidents. Everyone recognizes the word, “heart attack” and knows that this means that an artery in the heart has been blocked. Someone that has had a heart attack needs immediate medical attention. The same is true when someone experiences a “brain attack.” If an artery supplying a part of the brain is blocked, then that part of the brain’s function can be lost. We know that if we can get a heart attack victim to a catheterization (cath) lab very fast, the symptoms of the heart attack can be ameliorated and stopped. If we can get a victim of a stroke to a special lab within three hours of the onset of symptoms, the probability of stopping the symptoms and having a good rehabilitation climbs astronomically. A stroke, or cerebral vascular accident is when an artery supplying a particular part of the brain is stopped up and blood cannot reach this part. The functions supplied by that part of the brain stop, or are destroyed, or immensely impaired. Major complaints associated with ischemia to the brain include:

- Brief loss of consciousness, or period of decreased consciousness (fainting, confusion, convulsions or coma)
- Sudden, severe headache with no known cause.
- Sudden numbness or weakness of the face, arm or leg, especially on one side of the body.
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden confusion, trouble speaking or understanding.
- Sudden trouble seeing in one or both eyes.

When someone experiences symptoms like these, it is an emergency. If the symptoms improve and/or disappear within 24 hours, the attack is called a TIA which means Transient Ischemic Attack. If the symptoms last longer than 24 hours it is a stroke. In the beginning, one does not know if the attack will end in 24 hours and be a TIA or have symptoms that continue and be a stroke. With certain tests, a physician can determine the type of stroke and whether it would respond to treatment. If an ischemic stroke can be treated within 24 hours, the symptoms can be alleviated and sometimes cured. There are two kinds of strokes. One is ischemic and the other is hemorrhagic. In ischemic strokes the blood vessel to the brain is plugged and the part of the brain that the vessel supplies is damaged due to lack of oxygen. There are two kinds of ischemic strokes. One is caused by the narrowing of the artery with a clot forming on it. The clot forming in the narrowed artery is called a thrombus and for this reason this stroke is called a thrombotic stroke. The other ischemic stroke is caused by a clot that forms in the heart or aorta and travels up to the brain and occludes an artery.

This kind of traveling clot is called an embolism and the stroke is an embolic stroke. Ischemic strokes are most common and cause 84% of all strokes. The second major kind of stroke other than ischemic is called a hemorrhagic stroke. This is when the blood vessel in the brain breaks and blood goes directly out of the vessel. If the bleeding occurs in the parenchyma of the brain this is called an intracranial hemorrhage (ICH) and if it occurs outside, or under the brain it is a subarachnoid hemorrhage. Hemorrhagic strokes only make up 15% of all strokes but cause 30% of the deaths that are caused by strokes. If the emergency room doctor does a CT scan as soon as possible, he or she can determine if there is a hemorrhage (bleeding). If there is no

hemorrhage, and it is within 3 hours of onset of the symptom(s), the doctor may initiate a treatment to dissolve the clot, called tissue plasminogen activator (tpa). Tpa stimulates an enzyme called plasminogen to dissolve the clot. Often the results can be dramatic. If the stroke is due to bleeding, tpa would only make the bleeding worse. That is why it is so important to determine the kind of stroke in order to provide the best treatment.

Remember the signs of a stroke and when you see them, get the patient to a hospital as soon as possible. Some hospitals have developed stroke centers specially designed to evaluate the kind of stroke and start the treatment as soon as possible. So like a heart attack, a quick evaluation to find the clot and identify if it is hemorrhagic or ischemic, can give an ischemic "brain attack" a strong chance to be cured.

Reference

1. http://www.stroke.org/site/DocServer/NSA_complete_guide.pdf?docID=341

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