

Stroke Imaging Protocols

RTS 4

Background

Stroke are a very serious medical emergency and patients who suffer from one need to be treated as soon as possible. They are the fourth leading cause of death in the United States.¹ There are two main types of stroke, ischemic and hemorrhagic. Medical imaging scans, such as CT (computed tomography) and MRI (magnetic resonance imaging), can help doctors diagnose patients to get them into treatment fast.

Ischemic Strokes

(see Images 1 & 3)

- Most common type of stroke²
- When an artery in the brain is blocked off restricting blood flow to an area of the brain²
- Two types:
 1. Embolic³
 2. Thrombotic³

Hemorrhagic Strokes

(see Images 2 & 3)

- Least common type of stroke⁴
- Happens when a weakened blood vessel in the brain breaks causing blood to leak in the brain tissue⁴
- Severe brain damage occurs from this⁴
- Two types
 1. Intracerebral stroke³
 2. Subarachnoid stroke³



Image 1. CT of an ischemic stroke⁵

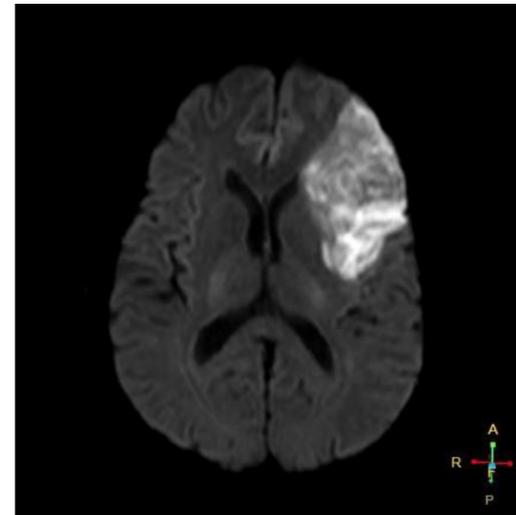


Image 2. MRI of an Hemorrhagic stroke⁶

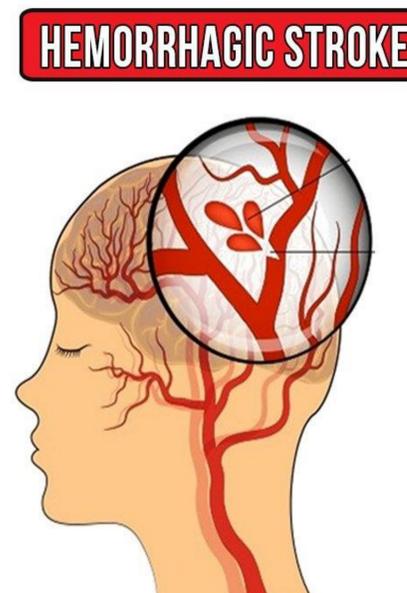
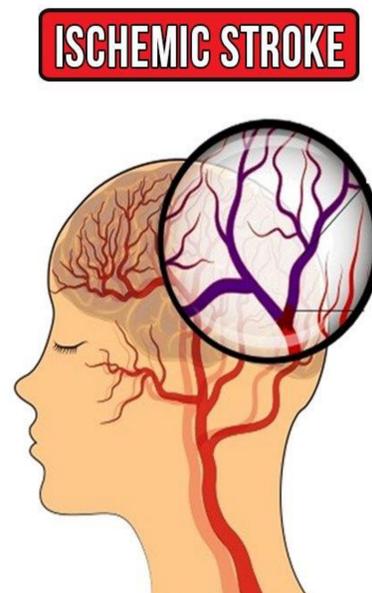


Image 3. Ischemic stroke vs hemorrhagic⁷

Imaging

Medical imaging helps physicians gain important information about a patient to help get them treated right away. The most common types of medical imaging would be CT and MRI (refer to image 1 & 2).⁸

Non-contrast CT's and CTA (computed tomography angiography) are going to be very helpful in diagnosing a stroke patient.⁸ These are preferred because of how fast they are.⁸ CTAs are effective in diagnosing small to medium vessel occlusion within the Circle of Willis.⁹

MRI's are a more detailed medical imaging scan and can prove, with certain sequences such as the DWI and FLAIR, if a patient is having a stroke or not.² However these scans are very sensitive to motion and take around 30 minutes.² This is not always ideal because physicians want to get the patient into treatment as fast as possible.²

References

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