



Head CT Interpretation in the ED: A Primer and a Focus on Stroke Patients

Learning Objectives

- Outline the basic principles in interpreting the head CT in the Emergency Department
- Review systematic head CT interpretation in the diagnosis of ischemic stroke, SAH, and ICH.

Background

Patients frequently present to the Emergency Department (ED) with cerebrovascular accidents (CVAs) such as ischemic stroke, subarachnoid hemorrhage (SAH), and intracerebral hemorrhage (ICH). CT neuroimaging is commonly used to establish these diagnoses. The availability of computer-based digital imaging has allowed the emergency physician to initially review these CT images, discuss the apparent findings with radiology consultants, and to provide preliminary CT findings to neurology and neurosurgery consultants in order to develop an effective treatment plan. This technology has, therefore, enhanced the role of the emergency physician in diagnosing and treating ED CVA patients.

In addition to the use of CT neuroimaging, there is also the increased availability of other neuroimaging techniques such as MRI, MRA, and cerebral angiography. Although most often not indicated, there may be situations in which these tests may augment the information provided standard CT neuroimaging.

This lecture will include a presentation of the basic methodology by which emergency physicians can systematically review CT neuroimages and focus on patients with suspected ischemic stroke, SAH, and ICH.

Key Clinical Questions

- What are the principles that guide the systematic approach to head CT interpretation?
- How can CT interpretation be performed systematically in the diagnosis of ischemic stroke, SAH, and ICH in ED CVA patients?
- What are the head CT findings commonly seen in patients with ischemic stroke, SAH, and ICH?