Differentiating Acute-on-Chronic Subdural Hematoma and Acute Subdural Hematohygroma

Taha Abdulhakim Elghamudi1 and Mohammed Nazir Khan2,3
1McMaster University, Hamilton, Canada, 2Diagnostic Neuroradiologist, Hamilton General Hospital, Hamilton, Canada and 3Department of Radiology, McMaster University, Hamilton, Canada

Keywords: Traumatic brain injuries; subdural hematoma; acute subdural hematohygroma; acute-on-chronic subdural hematoma; traumatic intracranial hemorrhage; subdural hygroma; neuroradiography

In the setting of acute trauma, low-density cerebrospinal fluid may enter and accumulate within the subdural space through an arachnoid membrane tear resulting in an acute traumatic subdural hygroma. Acute subdural hygromas are a relatively common post-traumatic mass lesion with its incidence being reported as 5–20%. When mixed with acute subdural hemorrhage, the resulting mixed density acute subdural hematohygroma (ASHH) is often misdiagnosed as an acute-on-chronic subdural hematoma (ACSH). The erroneous assumption of an underlying chronic component may underestimate the severity of a patient’s acute injury, and it may occur even when recent prior imaging demonstrates no pre-existing subdural collection. Accurate characterization of the acuity and severity of injury may influence the choice of surgical technique. Radiologists at trauma centres face the challenge of differentiating between ACSH and ASHH when imaging demonstrates mixed density extra-axial collections.

In the setting of acute trauma, a radiologist must avoid automatically pronouncing a mixed density subdural collection as acute-on-chronic, and should instead consider the differential of ASHH. Imaging findings that support a diagnosis of ASHH include the following: 1. Significant mass effect, sulcal effacement, and midline shift. 2. Sharp delineation between low density and high density components. 3. Absence of internal strand-like areas of intermediate density associated with chronic subdural hematoma. Accurate diagnosis of ASHH can lead to improvements in patient outcomes through appropriate selection of therapeutic interventions.
options and surgical techniques as well as furthering knowledge of its imaging characteristics, natural history and evolution.

**Disclosures.** The authors have no conflicts of interest to declare.

**Statement of Authorship.** T.E. – Drafting the manuscript.
N.K. – Guidance, supervision and revision of the manuscript.

**References**
