Intraparenchymal hemorrhage computed tomography

see also Traumatic intraparenchymal hemorrhage computed tomography.

Noncontrast computed tomography (NCCT) is the gold standard to detect intracerebral hemorrhage (ICH) in patients presenting with acute focal syndromes [1].

Acute intracerebral hemorrhage usually measures 30 to 80 Hounsfield units, though this can vary by hemorrhage protein concentration and serum hematocrit level [2].

Acute ICH is usually round/ellipsoid with defined borders and minimal hypodense perihematomal edema.

Different types of hemorrhages may share a common appearance on CT and the optimal therapeutic approach varies depending on etiology. An additional diagnostic workup is frequently indicated to make the final diagnosis and to assist in urgent patient management. CT- and MR angiography, and digital angiography can diagnose vascular anomalies, Computed tomography venography can reveal cerebral vein thrombosis, diffusion-weighted MRI (DWI) may show hemorrhagic transformation of an infarct, and susceptibility-weighted MRI (SWI) may detect hypertensive and amyloid angiopathy-related microbleeds. MR also has a major role in revealing underlying etiologies such as cavernoma, primary brain tumor or metastases. These imaging tools assist in determining the cause of ICH, and also in assessing the risk of deterioration. Prognostic factors such as size, location, mass effect, and detection of the “spot sign” all play an important role in foreseeing possible deterioration, thus allowing prompt intervention [3].

Intracerebral hemorrhage volume is a powerful predictor of 30-day mortality after spontaneous intracerebral hemorrhage (ICH). Kothari et al., compared a bedside method of measuring CT ICH volume with measurements made by computer-assisted planimetric image analysis [4].

Signs

Spot sign.

Swirl sign.

Blood-fluid level

Secondary findings

Secondary findings detected on NCCT might also affect initial patient stabilization and management. [5].

Presence of intraventricular hemorrhage portends a high risk of developing obstructive hydrocephalus and decreased survival [6].

Case report

Intraparenchymal hemorrhage centered on the left temporal lobe, measuring approximately 2.7x 5.5x 2.3 cm (AP x T x CC), which associates minimal vasogenic cerebral edema, and exerts a slight mass effect on the adjacent left convex grooves. Vascular alterations are not identified in this study with contrast. Preserved ventricular size Central midline and basal cisterns preserved.

Left Pulmonary Artery Aneurysm with diameters of 11.4 x 6.2 cm (APxCC diameters), with extension of the dilation affecting the lobar branch of the ipsilateral lower lobe and to a lesser extent the subsegmental branches of the basal pyramid . Dilation is associated with a thinning of the interatrial septum with an apparent passage of contrast through it, which due to its location may correspond to ostium secundum.

Case reports from the HGUA

A 51-year-old woman presented with symptoms of aphasia and right hemiplegia. Upon arrival, she was hemodynamically stable. However, during the transfer, her consciousness deteriorated, accompanied by vomiting and leftward gaze deviation.

Left frontotemporal intraparenchymal hemorrhage measuring 77 x 34 mm, with heterogeneous density suggestive of hyperacute bleeding and perilesional edema, resulting in a significant mass effect with a displacement of the midline to the right by up to 13 mm due to subfalcine herniation. It is associated with partial collapse of the left lateral ventricle and early signs of left uncal herniation.

1)
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