Thalamic hemorrhage

- Baseline CBV-normalized BOLD fMRI of visual stimulation in awake vs. anesthetized mice
- Hemispheric asymmetry of [¹¹C](R)PK11195 binding to translocator protein 18 kDa (TSPO) in normal brain
- Recent advances on the mechanism of acupuncture in the treatment of subjective tinnitus
- Method of autopsy study of thalamus and basal nuclei
- Characterization of in vivo binding kinetics and non-displaceable binding of [¹⁸F]SynvesT-1 in the rat brain
- Dynamic distribution and clearance of ^{99m}Tc-DTPA in brain extracellular space
- Obacunone Alleviates Thalamic Pain via Promoting LCN2-Mediated Phagocytosis of Astrocytes in Mice
- A rare case report: acute necrotizing encephalopathy and acute fulminant myocarditis

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Hemorrhagic bleeding into the thalamus, typically resulting from hypertension.

see also Thalamo-mesencephalic hemorrhage.

see also Thalamic stroke.

Classification

Teramoto et al. classified thalamic hemorrhage was classified into 4 types: anterior type (supplied mainly by the tuberothalamic artery), medial (mainly paramedian thalamic-subthalamic artery), lateral (mainly thalamogeniculate artery), and posterior (mainly posterior choroidal artery). The baseline characteristics, complications, and functional outcomes were assessed. [1].

Chung et al. classified thalamic hemorrhage into four regional types and one global type according to the primary bleeding sites: (i) anterior type occurring in the territory of the tuberothalamic artery, (ii) posteromedial type occurring in the territory of the thalamic-subthalamic paramedian arteries, (iii) posterolateral type occurring in the territory of the thalamogeniculate artery. (iv) dorsal type occurring in the territory of the posterior choroidal artery and (v) global type occupying the entire area of the thalamus [2].

Etiology

Hypertension was the most frequent cause of thalamic hemorrhage (74%) [3], and this result was similar to previous studies that indicated that hypertension was the major risk factor for intracerebral hemorrhage [4].

Clinical features

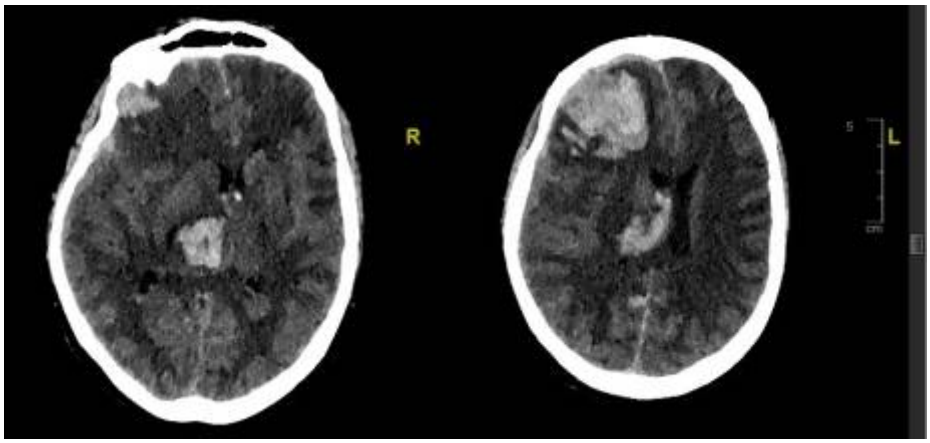
Classically, contralateral hemisensory loss. Also hemiparesis when the internal capsule is involved. Extension into upper brainstem → vertical gaze palsy, retraction nystagmus, skew deviation, loss of convergence, ptosis, miosis, anisocoria, ± unreactive pupils. H/A in 20–40%. Motor deficit similar to putaminal hemorrhage, but contralateral sensory deficit widespread and striking.

Hydrocephalus may occur from compression of CSF pathways. In 41 patients, when hemorrhage > 3.3cm on CT, all died. Smaller hematomas usually caused permanent disability.

Medial thalamic hemorrhage. Wrong-way gaze: Eyes look away from lesion and towards hemiparesis (an exception to the axiom that the eyes look towards a destructive supratentorial lesion) [5].

Diagnosis

Thalamic hemorrhage is easily recognisable on CT as hyperdensity within the thalamus.



see Intracerebral hemorrhage diagnosis

Treatment

The Clot Lysis: Evaluating Accelerated Resolution of IVH trial examined whether irrigating the ventricular system with alteplase improved functional outcomes in patients with small intracerebral hemorrhage (ICH) and large intraventricular hemorrhage (IVH).

Data suggest that the ultrarapid MIS technique is a safe and effective way in the management of selected cases with thalamic hemorrhage, with favorable long-term functional outcomes. However, a large, prospective, randomized-controlled trial is needed to confirm these findings [6].

Outcome

Thalamic hemorrhage bears the worst outcome among supratentorial intracerebral hemorrhage (ICH) [7]

Concurrent IVH is strongly associated with mortality in patients with spontaneous thalamic hemorrhage (STH) . Delayed normal pressure hydrocephalus (NPH) may develop more frequently in STH patients with IVH who were treated with EVD [8].

Poor outcomes were associated with mass-related obstruction of the third ventricle from thalamic ICH in alteplase-treated patients and from IVH in saline-treated patients. Once the ventricular system is cleared with alteplase, obstruction of cerebral spinal fluid flow from thalamic hemorrhage might become important in functional recovery [9].

Basal ganglion (putaminal) or thalamic hemorrhage: surgery is no better than medical management, and both have little to offer [10] [11].

Case series

Retrospective analysis included 303 consecutive patients with spontaneous thalamic hemorrhage. Thalamic hemorrhage was classified into 4 types: anterior type (supplied mainly by the tuberothalamic artery), medial (mainly paramedian thalamic-subthalamic artery), lateral (mainly thalamogeniculate artery), and posterior (mainly posterior choroidal artery). The baseline characteristics, complications, and functional outcomes were assessed.

The anterior type was found in 10 patients (3.3%), the medial type in 47 (15.5%), the lateral type in 230 (75.9%), and the posterior type in 16 (5.3%). Intracerebral hemorrhage volume was smallest in the anterior type, and significantly smaller than in the medial ($P = 0.002$) and lateral types ($P < 0.001$). Intraventricular hemorrhage (IVH) or acute hydrocephalus was significantly associated with the medial type ($P < 0.01$ or $P < 0.01$, respectively). Non-IVH or non-acute hydrocephalus was significantly associated with the anterior ($P < 0.05$ or $P < 0.05$, respectively) and lateral ($P < 0.05$ or $P < 0.05$, respectively) types. Emergency surgery was correlated only with the medial type ($P < 0.01$). The independent predictors of poor outcome were age (odds ratio [OR], 1.07; $P = 0.002$), admission National Institutes of Health Stroke Scale score (OR, 1.32; $P < 0.001$), and type of thalamic hemorrhage (OR, 2.08; $P = 0.038$).

The present study proposed a novel anatomic classification of thalamic hemorrhage according to the major thalamic vascular territories [12]

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