Tick-borne meningitis complicated by a cardioembolic intraluminal carotid artery thrombus and stroke

Klíšťová meniningitida komplikovaná kardioembolickým intraluminálním trombem v krkavici a iktem

Dear Editor,

Intraluminal carotid thrombus (ILCT) is present in less than 2% of patients presenting with acute ischemic stroke, and 75–81% of ILCT cases are associated with atherosclerosis [1,2]. We present a rare case of acute stroke with ILCT on bare carotid artery without a plaque.

A 48-year-old man with a history of arterial hypertension presented with 6 days of fever, headache, dizziness and episodes of mild cough and throat pain. He denied smoking or any recent tick bite. On exam, patient had fever of 40 °C and pharyngeal erythema.

Initial testing revealed leukocytosis (11 × 10⁹/L), elevated C-reactive protein (CRP) (13 mg/L). Cerebrospinal fluid analysis showed 36 mononuclears, 20 polymorphonuclears, elevated protein (0.95 g/L) and positive antibodies against European tick-borne encephalitis virus (TBEV), diagnostic of meningitis due to TBEV. A course of dexamethasone was initiated and patient’s symptoms were slowly improving. On the evening of the 6th day, the patient developed sudden global aphasia and severe right-sided hemiparesis, National Institutes of Health Stroke Scale (NIHSS) was 13. He was last seen normal 3 h prior. CT

![Fig. 1. CTA in coronal section (left) and 3D reconstruction (right) shows intraluminal filling defect in the extracranial segment (C1) of the left internal carotid artery of 3 cm in length (arrow).](image)

Obr. 1. CTA ve frontálním řezu (vlevo) a 3D rekonstrukce (vpravo) ukazuje intralumínální defekt v extrakraniálním segmentu (C1) levé arterie carotis interna délky 3 cm (šipka).

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was normal, without early ischemic changes. Supra-aortic CTA revealed left middle cerebral artery (MCA) thrombus, and severe stenosis of extracranial left internal carotid artery (ICA) (Fig. 1) due to an elongated filling defect, concerning for ILCT. Intravenous recombinant tissue plasminogen activator (rtPA, 70 mg) was administered. Mechanical throm-
Recently, initial treatment with anticoagulation had been recommended for ILCT. A review of 145 cases concluded that medical treatment had lower risk and less benefits when compared to surgery, and led to thrombus dissolution in 86% of patients [2]. In one series, 24 patients were successfully treated with initial anticoagulation of those, 14 cases with medical therapy alone, and 10 with delayed surgery [3]. Another series reported 20/23 cases were successfully treated with one week of initial anticoagulation, while 3/23 developed new neurologic deficit or carotid occlusion, only 2/3 patients had diffusion weighted imaging changes on MRI at one week follow-up [4]. If medical therapy does not lead to thrombus dissolution within 1–4 weeks, surgery should be considered.

In conclusion, timely CT and CTA for inhouse acute ischemic stroke is crucial to guide decisions on rtPA and MT. Tandem (extra- and intracranial) occlusion is not a contraindication for MT in acute stroke with large vessel thrombosis. Patients with ILCT without atheromatous changes can be treated with acute intravenous thrombolysis, acute MT, anticoagulation, acute or delayed carotid endarterectomy or other endovascular intervention.

References