Cerebral embolisation in bacterial endocarditis

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A 77-year-old woman receiving antibiotic treatment for a recent group-B streptococcal bacteraemia was admitted with subacute bilateral cerebellar infarctions and dyspnoea. The day following admission she developed left hemiplegia, gaze palsy and left hemi-neglect with a National Institutes of Stroke Scale (NIHSS) score of 15. Multi-modal computed tomography demonstrated a right middle cerebral artery M2 segment occlusion with a corresponding perfusion defect (Figure 1). A 5mm cylindrical, pale yellow, rubbery material was retrieved via endovascular thrombectomy (Figure 2). Transoesophageal echocardiogram demonstrated mitral valve vegetations

Figure 1: Baseline computed tomography findings.

Panel A: Non-contrast computed tomography at time of neurological deterioration demonstrating no early ischaemic change. Panel B: Computed tomographic angiography showing right middle cerebral artery M2 segment occlusion. Panel C/D: Perfusion imaging displaying prolonged Tmax (Panel C) and reduced cerebral blood flow (Panel D) in the right middle cerebral artery territory.
(Figure 3). She was then treated with high dose intravenous penicillin. 24-hour NIHSS score was 1. Despite neurological improvement, she experienced progressive cardiac decline due to severe heart failure and died 13 days after her stroke.

Neurological sequelae are a common occurrence in patients with infective endocarditis, and approximately 30% of patients with bacterial endocarditis present with neurological complications, most of which are cerebral embolic events. Intravenous thrombolysis is the standard treatment within 4.5 hours of acute ischaemic stroke, but systemic thrombolysis is contraindicated in this setting due to higher rates of haemorrhagic transformation. In patients presenting with bacterial endocarditis and embolic occlusion of a proximal intracranial vessel, endovascular thrombectomy appears to be a safe and effective reperfusion strategy.

**Figure 2:** Embolised material from native mitral valve bacterial endocarditis.
Figure 3: Transoesophageal echocardiogram image of mitral valve vegetations (arrow).

Competing interests:
Nil.

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