The catastrophic basilar artery occlusion

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DESCRIPTION

A 71-year-old man with hypertension presented to the emergency department with slurred speech, dizziness and four limbs weakness with left side predominance for 3.5 h. A non-contrast CT of head at arrival showed a hyperdense basilar artery (figure 1A) and the diagnosis of basilar artery occlusion (BAO) was made. Given the unavailability of intra-arterial treatment, he received recanalisation therapy with intravenous alteplase 4 h after the symptom onset; however, a rapid deterioration of consciousness was observed. On the next day, brainstem reflexes were absent and the follow-up CT of head showed extensive infarcts of basilar artery territory and hydrocephalus (figure 1B). The patient received supportive therapy and he passed away 1 week later.

BAO, accounting for about 1% of all strokes, had been mostly fatal before the introduction of

antithrombotic treatment.¹ Past investigations have demonstrated that early intravenous or intra-arterial thrombolysis has a beneficial effect.¹ Patients with acute ischaemic stroke would benefit from intravenous tissue plasminogen activator within 4.5 h after onset, and a shorter time from the onset to treatment is associated with a better outcome.² Likewise, intra-arterial thrombolysis within 6 h would bring a more favourable outcome for BAO and the prognosis is always dismal beyond 9 h.³ The hyperdense basilar artery sign is specific for BAO; nonetheless, it is observed in about two-thirds of patients.¹ In addition, diffusion-weighted MRI could detect early ischaemic damage of BAO.¹ Unfortunately, a substantial proportion of patients with BAO died or became dependent despite the endeavours in early diagnosis and modern antithrombotics.¹

Figure 1 (A) Head CT at arrival showing a hyperdense basilar artery (arrows) without apparent parenchymal changes in the brain. (B) Head CT 1 day later showing hypodensity and swelling over brainstem (arrows), cerebellums (asterisks) and occipital lobes (triangles).

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Learning points

- ▶ The hyperdense basilar artery sign is a specific CT finding for basilar artery occlusion (BAO), and diffusion-weighted MRI should be performed in patients with diagnostic uncertainty.
- ▶ Recanalisation therapy for BAO could be performed by intravenous or intra-arterial thrombolysis, and the time from onset to treatment is crucial.
- ▶ The efforts in early diagnosis and recanalisation therapy improve the outcome of BAO; however, BAO is still a catastrophe for many patients.

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