Bioccipital Lobe Hypoperfusion and Anton's Syndrome Resolution with Intravenous Thrombolysis

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Background: Anton's syndrome is a rare neurological disorder characterized by a combination of visual anosognosia and confabulation of visual experience, most often seen after bilateral ischemic damage to the posterior occipital cortex. *Case report:* We report the first case of an acute synchronous P2 occlusion as confirmed by multiparametric computed tomography (CT) including perfusion. After the administration of Recombinant tissue plasminogen activator (rtPA), Anton's syndrome completely resolved. *Conclusion:* Multiparametric CT imaging may aid in quickly proving the underlying stroke in Anton's syndrome, especially helpful considering the discrepancy between the patient's perception and clinical examination results.

Key Words: Stroke—Anton's syndrome—posterior cerebral artery occlusion—anosognosia—CT perfusion

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Case Report

We report the case of a 93-year-old woman presenting in the emergency room 2.5 hours after sudden onset of both bilateral loss of vision and confusion. The patient was initially found by relatives confused and responding only to auditory stimuli while not visually recognizing them or the surroundings. The neurological exam at admission suggested bilateral cortical blindness, especially as the menace reflex was negative on both sides. However, visual loss was denied by the patient herself, which at first was attributed to confusion of the patient. Both direct and indirect pupil reaction was normal and no abnormal eye movement disorder was apparent. Multiparametric computed tomography (CT) was performed 15 minutes after arrival at the ER. On non-contrast CT, no early infarction signs were present (Fig. 1(A)). CT perfusion showed bilateral ischemic changes and perfusion deficits in the entire posterior territories in the cerebral blood flow map (Fig. 1 (B)). Cerebral blood volume was completely preserved, indicating a large cerebral blood flow−cerebral blood volume mismatch on both sides (Fig. 1(C)). CT angiography revealed occlusion of both posterior cerebral arteries in the respective P2 segment (Fig. 1(D)). A total of 63 mg recombinant tissue plasminogen activator was administered intravenously. On admission to the stroke unit half an hour later, the only remaining symptom was bilateral loss of the menace reflex. Follow-up magnetic resonance imaging performed on day five showed only discrete focal diffusion restrictions in both occipital lobes and the left thalamus (Fig. 1(E)). On time-of-flight angiography, both posterior cerebral arteries were perfused with a residual short-segment stenosis in the left P2 segment distal to the previous occlusion (Fig. 1(E)). Electrocardiogram showed tachycardic atrial fibrillation. The patient was started on

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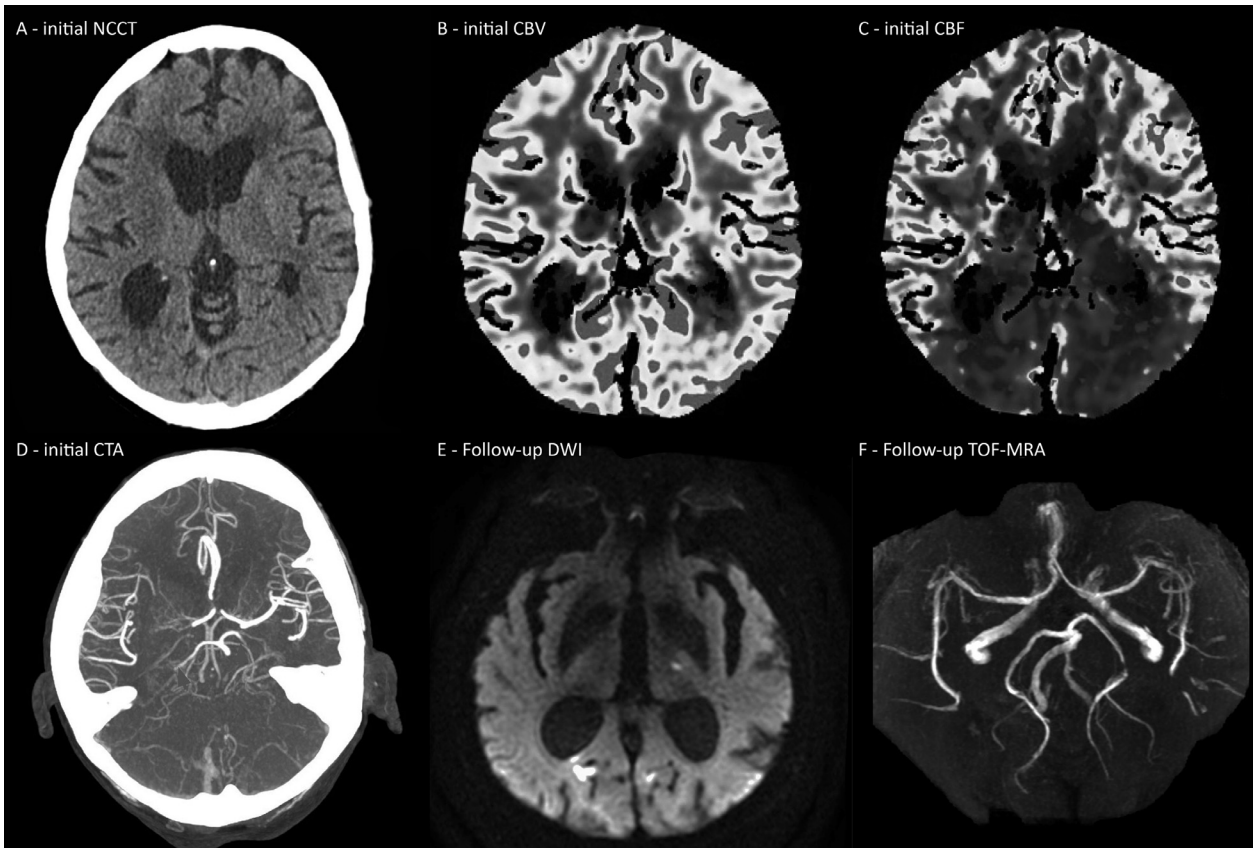

Figure 1. *Bilateral P2 segment occlusion with corresponding perfusion deficit in the posterior occipital cortex.* ***(A)*** *Depth-weighted maximum intensity projection of CT angiography demonstrating bilateral P2 segment occlusion (red arrows),* ***(B)*** *Cerebral blood volume perfusion map,* ***(C)*** *Cerebral blood flow perfusion map,* ***(D)*** *Initial non-contrast CT,* ***(E)*** *Diffusion-weighted magnetic resonance imaging at day 5* ***(F)*** *Time-of-flight MR angiography at day 5. Abbreviation: CT, computed tomography.*

Apixaban and discharged without focal neurological deficits on day 7.

Discussion

Anton's syndrome is characterized by cortical blindness with the patient affirming they can still see, representing a form of visual neglect. Most reported cases describe damage to both occipital lobes, mostly concurrently.[1-4] Cardioembolic stroke caused by atrial fibrillation is considered the most likely cause in the present case. A possible explanation for the synchronous occlusion is a cardiac embolus splitting and dislodging into both P2 segments. As suggested previously,[5] the involvement not only of primary visual processing centers in the striatal cortex but also of higher-order processing regions and corresponding tracts may disrupt communication between visual and speech areas, leaving the patients unable to verbally describe what they see. This case demonstrates impressively how multiparametric CT imaging made it possible to quickly prove the clinically suspected stroke. Considering the discrepancy between the patient's perception and clinical examination results in Anton's syndrome, this can be especially helpful.

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Conflicts of interest

None.

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