Posterior Reversible Encephalopathy Syndrome: A Rare and Cautionary Complication During Percutaneous Coronary Intervention

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IMAGES IN INTERVENTION

Posterior Reversible Encephalopathy Syndrome

A Rare and Cautionary Complication During Percutaneous Coronary Intervention

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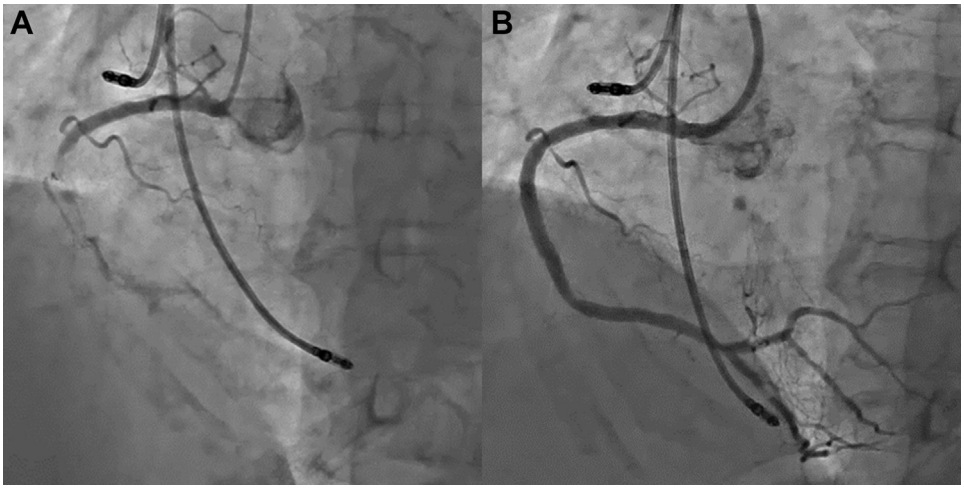
A 78-year-old woman, who underwent hemodialysis and magnetic resonance imaging (MRI) nonconditional pacemaker implantation for sick sinus syndrome, presented with non-ST-segment elevation myocardial infarction. A coronary angiogram and subsequent intravascular ultrasound from the right brachial artery revealed severe circumferential calcified stenosis of the middle right coronary artery, which required atheroablation (Figure 1A). Previous computed tomography (CT)

FIGURE 1 Percutaneous Coronary Intervention



Coronary angiogram: **(A)** initial and **(B)** final.

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

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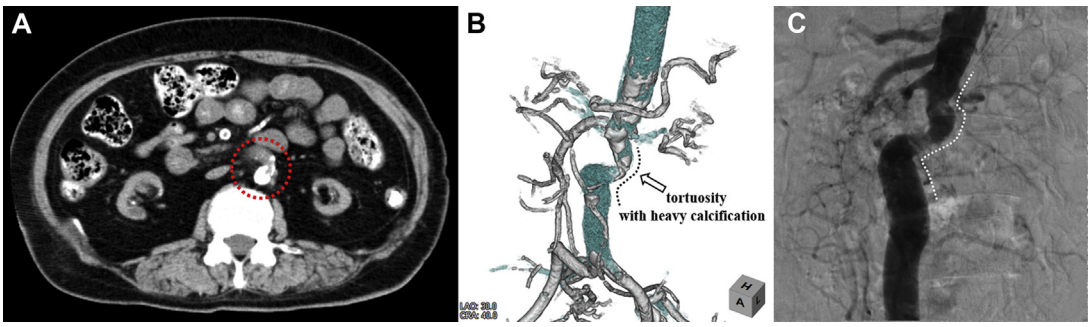
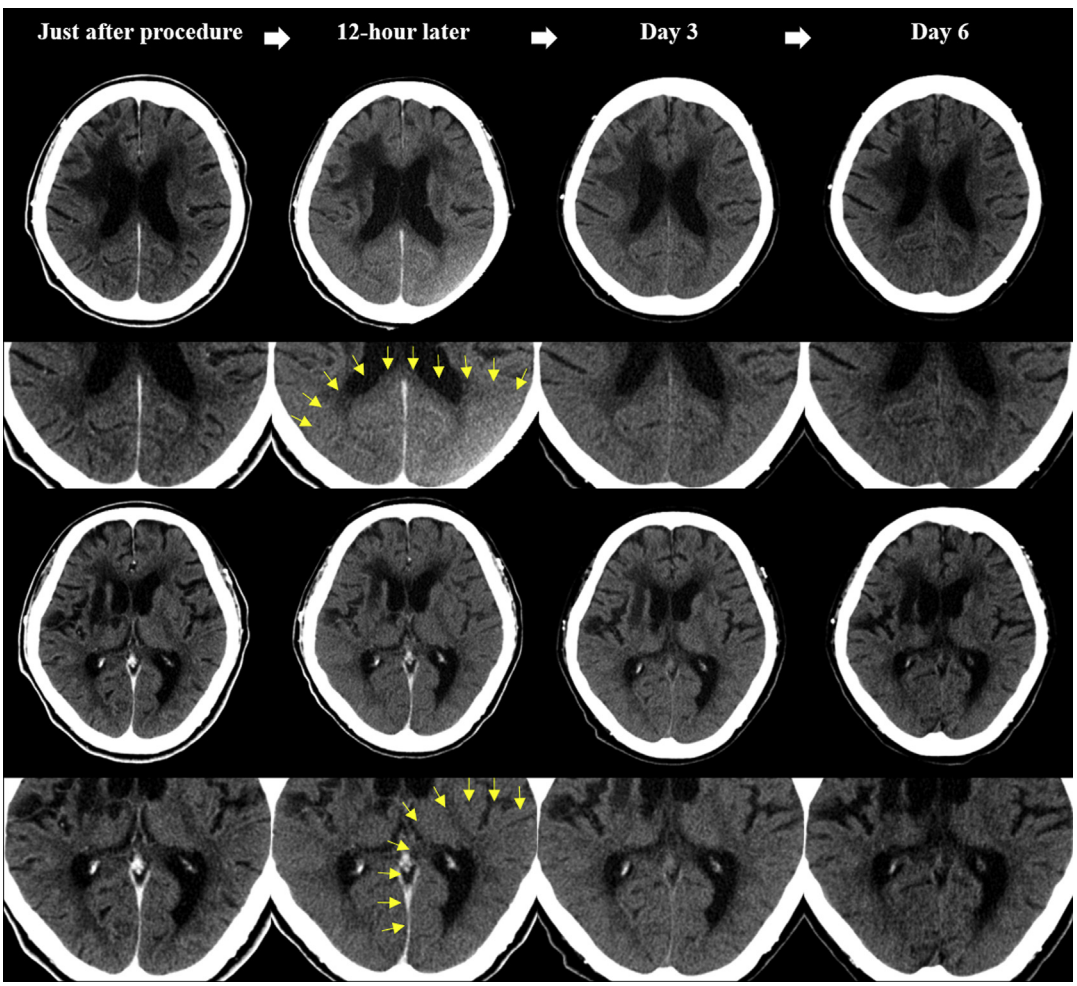
FIGURE 2 Evaluation of the Descending Aorta



(A) Computed tomography (**dotted circle** = calcification). **(B)** Volume-rendered image (**dotted line** = calcification). **(C)** Aortography showing heavily calcified tortuosity of the middle descending aorta.

FIGURE 3 Serial Head CT Showing Posterior Reversible Encephalopathy Syndrome



Computed tomography (CT) immediately after the procedure revealed an old, previously identified intracranial hemorrhage. CT performed 12 h later confirmed cerebral edema, which gradually improved (**arrows** = cerebral edema).

showed a heavily calcified tortuous descending aorta, which made it difficult to use any supporting devices via the femoral artery (**Figure 2**). Therefore, adequate blood pressure (BP) was maintained to avoid coronary slow-flow phenomenon during the procedure. However, she complained of severe chest oppression during orbital atherectomy, and her BP suddenly increased to >200 mm Hg, resulting in large BP fluctuations. She gradually became restless and had difficulty following commands. After the successful procedure, her confusion and disturbed consciousness persisted (**Figure 1B**). Thereafter, head CT showed cerebral edema and focal contrast pooling in the posterior lobe, which suggested a blood-brain barrier dysfunction (**Figure 3**). Because her cerebrospinal fluid test was normal, she was diagnosed with posterior reversible encephalopathy syndrome (PRES), and her BP was controlled under 140 mm Hg. Serial head CT evaluation showed a gradual improvement of cerebral edema, which was accompanied by ameliorating neurological findings. Six days later, her neurological abnormalities fully recovered.

PRES, a clinicoradiological disorder with poor neurological prognosis, is characterized by cerebral edema related to hypertension and renal failure and mimics stroke (1). To precisely detect cerebral edema and diagnose PRES, MRI is strongly recommended. However, MRI was contraindicated for our case due to the patient's MRI-nonconditional pacemaker. Although the specific therapeutic strategies for PRES remain unclear, antihypertensive therapy was reportedly effective (1). This was the first PRES reported during a percutaneous coronary intervention, and interventionalists should be aware of this rare and cautionary complication.

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