A 68-year-old man presented to our hospital with chest pain and cardiac pulmonary arrest (CPA). Two weeks previously, he had experienced atrial fibrillation which had been treated by bisoprolol, a β1 selective blocker. He had already
stopped smoking ten years previously. Although he had hypertension, he had no other coronary risk factors (including dyslipidemia, diabetes mellitus, or a family history of cardiac disease). After resuscitation, ECG showed ST-segment elevation in the aVR lead with diffuse ST-segment depression. Coronary angiography revealed diffuse severe narrowing in the left anterior descending, left circumflex (Picture 1), and right coronary arteries (Picture 2). However, no significant organic stenosis was observed after the intracoronary administration of nitrate (Picture 3, 4). He was diagnosed with CPA due to multi-vessel coronary artery spasm. Beta-blocker treatment was discontinued and treatment with calcium antagonist and nitrate were started. Two years later, the patient remains free of symptoms and no other events have occurred.

Beta-blockers can theoretically cause coronary vasoconstriction because the activation of the $\beta_2$-adrenergic receptors can cause vascular smooth muscle dilatation; however, this effect tends to be outweighed by the vasoconstricting $\alpha_1$-receptors (1, 2). Physicians should therefore exercise caution when prescribing beta-blockers to patients with chest pain.

The authors state that they have no Conflict of Interest (COI).

References


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