A 48-year-old Caucasian woman developed a ‘ripping’ chest pain and shortness of breath while skiing off-piste at high altitude (>3300 m). She had dynamic ST changes on the electrocardiogram, an intermittent left bundle branch block, and a subsequent troponin I release (7.5 μg/L). She had no coronary risk factors or history of oral contraceptive use.

Concerns about an aortic dissection prompted a computed tomography aorta/coronary angiogram (Panel A: left coronary artery; lines show level of cross-sections). Cross-sections of left main (Panel B), proximal left anterior descending (LAD), and proximal Cx (Panel C) show compression of coronary arteries by extraluminal haematoma but preservation of the first diagonal—D1 (Panel D). There was no atheroma noted in the LAD, and the haematoma was located at multiple levels, supporting the diagnosis of a dissection originating in the left main, extending in the LAD and Cx. A 3D reconstruction of the coronary arteries showing compression of the lumen by haematoma due to dissection along the LAD (white arrows) but sparing D1 (black arrows) (Panel E). The subsequent conventional coronary angiogram confirms the left main dissection extending along the LAD (Panel F).

Following diagnostic angiography, an intra-aortic balloon pump was inserted and conservative management was attempted. However, she suffered haemodynamic collapse with anterior ST elevation. She underwent emergency coronary artery bypass grafting. Panel G shows the intra-operative findings with a haematoma along the LAD with normal appearance of D1. She went on to make a good recovery.

This is the first published case report suggesting a possible correlation between high-altitude skiing and spontaneous coronary artery dissection.

R.D. is a visiting research fellow from First Department of Cardiology, Medical University of Gdansk, Poland.

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