

# Coexistence of transient global amnesia, takotsubo syndrome, and spontaneous coronary artery dissection

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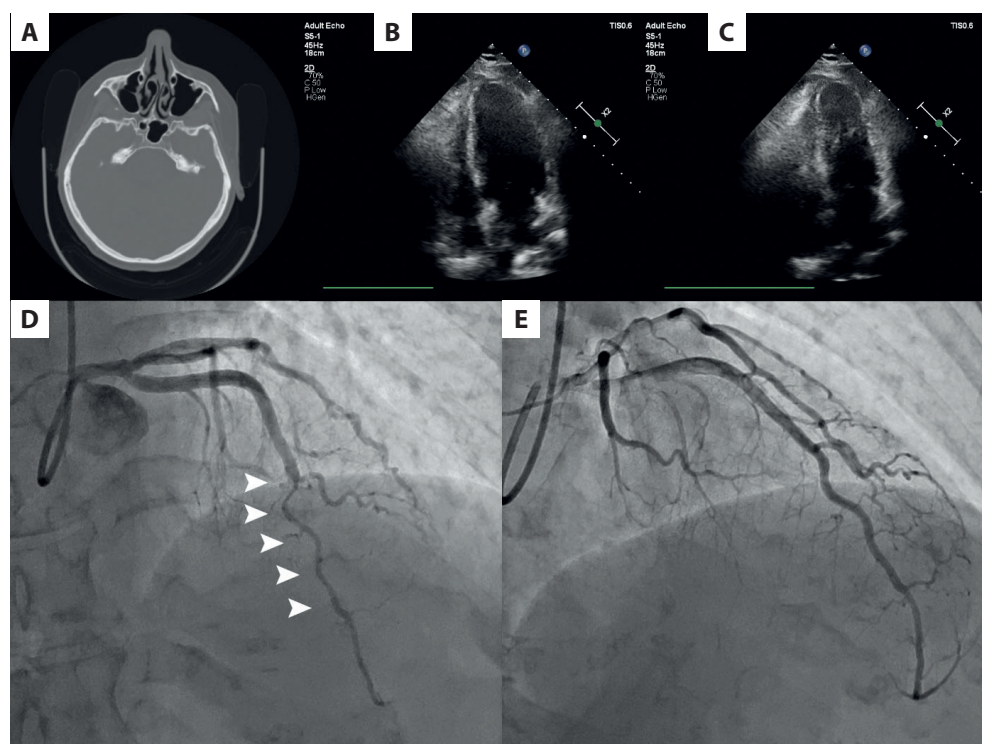
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A 64-year-old woman with a history of arterial hypertension and hyperlipidemia was admitted to the emergency department for acute disorientation in time and space and asking repetitive questions. According to relatives, she suffered from acute retrosternal chest pain associated with dyspnea for two hours. The symptoms were preceded by an acute emo-

tional stress event. Intracranial bleeding was ruled out (Figure 1A), and a neurologist diagnosed global amnesia. On the electrocardiogram, no changes suggesting myocardial ischemia were observed; however, the troponin I level was elevated up to 20.4 ng/ml (normal, 0–0.039 ng/ml). The echocardiogram confirmed akinesis of the apical segments,



**Figure 1.** Coexistence of transient global amnesia, takotsubo syndrome, and spontaneous coronary artery dissection. **A.** Native computed tomography scan of the brain without signs of intracranial bleeding. **B, C.** Four-chamber apical view on admission transthoracic echocardiogram with akinesis of the apical segments suggesting takotsubo syndrome (**B.** Diastole, **C.** Systole). **D.** Coronary angiogram of the left coronary artery. Features of type 2A spontaneous coronary artery dissection in the left anterior descending artery (arrows). **E.** Follow-up coronary angiogram of the left coronary artery. Complete healing of the mid-distal left anterior descending artery

suggesting takotsubo syndrome (TTS) (Figure 1B, C, Supplementary material, Video S1). The patient was admitted to the cardiology department where her neurological status improved spontaneously. A coronary angiogram was performed, and features of type 2A spontaneous coronary artery dissection (SCAD) were observed in the left anterior descending artery (Figure 1D, Supplementary material, Video S2). Due to the lack of symptoms and preserved distal flow, conservative treatment was proposed. She was treated with aspirin, clopidogrel, enoxaparin, bisoprolol, and a high-dose of atorvastatin. No recurrence of symptoms was observed. On day 5, an improvement in the contractility of the apical segments was confirmed, and she was transferred to the cardiac rehabilitation department. After six weeks, a control angiogram revealed complete healing of the mid-distal left anterior descending artery (Figure 1E, Supplementary material, Video S3). At that time, global and regional contractility of the left ventricle was normal, confirming the initial diagnosis of TTS.

A typical manifestation of TTS includes acute chest pain and/or dyspnea which mimic acute myocardial infarction and are triggered by intense stress [1]. Several features could support TTS diagnosis in our patient: regional left ventricular dysfunction that did not correspond to a single coronary artery territory and rapid recovery. In addition, recent head injury, intracranial hemorrhage, pheochromocytoma, and myocarditis were excluded. Stress can activate the sympathetic nervous system and lead to over-release of catecholamine which plays a central role in the pathophysiology of TTS. Also, the evidence that in women SCAD is often preceded by an acute emotional stressor [2] suggests that autonomic activation might also be crucial to the etiology of the condition. Similarly, transient global amnesia, which is characterized by a sudden episode of confusion that cannot be attributed to common neurological conditions could result from a catecholamine storm, thus representing the cerebral form of TTS [3]. These may underline the role of the brain-heart connection in the pathogenesis of these conditions. Both TTS and SCAD of the distal left anterior descending artery may affect the apical

myocardium; therefore, it is crucial to distinguish between both diseases. Especially type 2B SCAD of the left anterior descending artery may be misdiagnosed as TTS. However, both can coexist in rare cases [4]. The established diagnosis of SCAD in our patient did not affect treatment, as the conservative approach was feasible and recommended [5]. Physicians should be aware of the possible cardiac pathologies in patients with transient global amnesia.

### Supplementary material

Supplementary material is available at [https://journals.viamedica.pl/kardiologia\\_polska](https://journals.viamedica.pl/kardiologia_polska).

### Article information

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