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# Untreated severe obstructive sleep apnoea and development of acute aortic dissection

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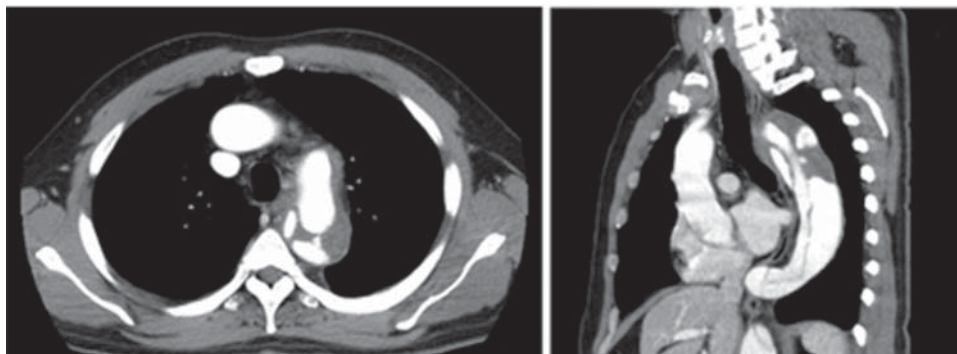
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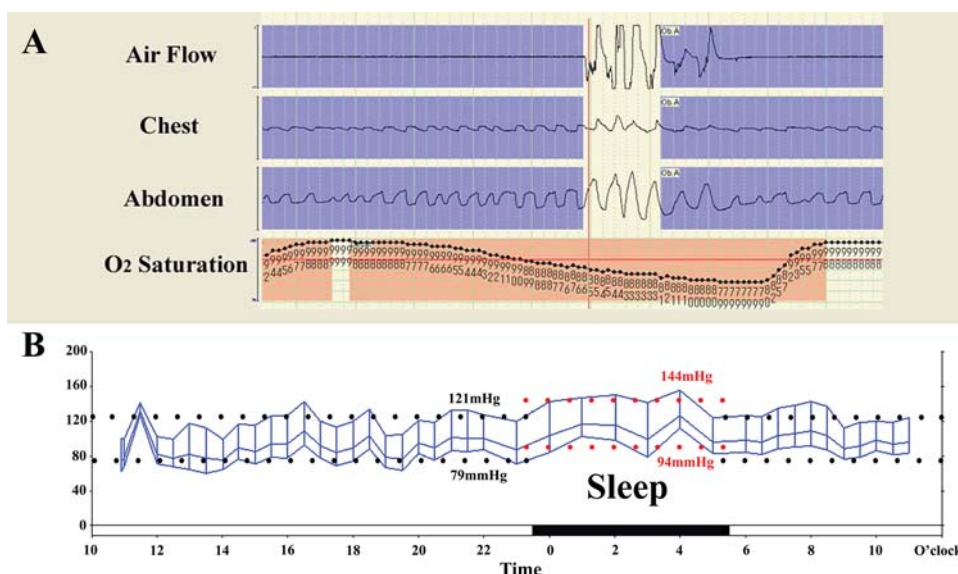
## DESCRIPTION

A 39-year-old man presented with sudden back pain and admitted. The contrast-enhanced CT showed the development of acute aortic dissection (AD) with patent false lumen. The dissection extended from just distal at the left subclavian artery to bilateral common iliac artery. The patient was treated with intensive blood pressure (BP)

control with antihypertensive drugs, however he represented back pain after 31 days, and the follow-up CT scan revealed new blood flow entry in thrombosed false lumen and dilatation of descending aorta from 48 to 55 mm (figure 1). Two years before this admission, he had been evaluated for secondary hypertension and underwent sleep polygraphic study, which revealed severe obstructive sleep



**Figure 1** Contrast-enhanced CT illustrates the development of Stanford type B aortic dissection with patent false lumen.



**Figure 2** (A) The sleep polygraphic study revealed the severe desaturation accompanied with obstructive apnoea from the late phase of apnoea to the cessation of apnoea. (B) The ambulatory blood pressure monitoring showed higher systolic and diastolic blood pressure during the night time with a decreasing of the fall in nocturnal blood pressure. Black and red dots presented mean systolic and diastolic pressure during awake and asleep, respectively.

apnoea (OSA) with apnoea-hypopnea index (AHI): 33.8/h and the lowest percutaneous oxygen saturation: 79% (figure 2). However he had refused recommendation of the continuous positive airway pressure (CPAP) treatment. We presumed that intermittent hypoxia, frequent wondering BP surge and exaggerated negative intrathoracic pressure accompanied with OSA<sup>1</sup> brought about the development of AD. We examined the variability of BP by ambulatory BP monitoring and re-evaluated OSA with polysomnography. These examinations revealed non-dipper-riser pattern of BP during sleep which is distinguishing BP of OSA<sup>2</sup> (figure 2), and the persistence of severe OSA with AHI: 80.8/h. Before the discharge the patient has started CPAP which was reported to reduce wondering BP surge in OSA

patients,<sup>3</sup> and his conditions are well controlled. The sleep study should be considered for patients with drug-resistant high BP, which is a major risk factor for AD.

**Competing interests** None.

**Patient consent** Obtained.

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