A 46-year-old male was transferred to the emergency department of our hospital because of severe back pain. After physical exam and abdominal ultrasound exam, an aortic dissection was suspected. The patient subsequently underwent a multidetector row computed tomographic (CT) angiography of the aorta (Somatom Definition, Siemens AG, Medical Solutions, Forchheim, Germany). Unenhanced CT images showed a calcified intimal flap in the abdominal aorta. Axial and reformatted contrast-enhanced CT images acquired during the arterial phase (11:38 a.m. on 30 June 2010) showed the intimal flap extending from the descending thoracic aorta at the orifice of the left subclavian artery to the abdominal aorta (Panels A and B). No other abnormal findings were noted (Panels A and B) at this time. Ten seconds following the arterial scan (11:39 a.m. on 30 June 2010), a portovenous phase was performed. The patient became restless. The axial and reformatted contrast-enhanced CT images acquired at the portovenous phase showed a large amount of left pleural haemorrhage, secondary to acute rupture of the aortic dissection (Panels C and D). The patient died several hours later due to the aortic rupture.

Computed tomography and magnetic resonance imaging are accurate imaging modalities in diagnosing aortic dissection. They can delineate the true and false lumen and any involved vessels. However, acute rupture of an aortic dissection is rarely documented on imaging studies. In our case, the dual-phase contrast-enhanced multidetector row CT clearly demonstrated the progression of a rupturing aortic dissection and associated haemothorax. This case also raises the possibility that a fast injection rate (4 mL/s in this study) at CT may be a risk factor for rupture of an aortic dissection and that slower injection rate may be considered in patients with symptomatic aortic dissection.

Panels (A–D). (A) Axial contrast-enhanced computed tomographic and (B) sagittal multiplanar reformatted images acquired at the arterial phase (11:38 a.m. on 30 June 2010) showed irregular intimal flap tear extending to the abdominal aorta (arrow). Note that no pleural haemorrhage was detected at this time. (C) Axial contrast-enhanced computed tomographic and (D) coronal multiplanar reformatted images acquired at the venous phase (11:39 a.m. on 30 June 2010) showed the rupture site of aortic dissection (arrow) and a large amount of left pleural haemorrhage.