A 49-year-old woman with primary pulmonary hypertension diagnosed 1 year previously was admitted as part of a research study at Harefield Hospital. She had no known precipitating factors or family history of the disease. Her main symptoms included exertional dyspnea and syncope. Her pulmonary artery systolic pressure was 110 mm Hg, with a mean pulmonary artery pressure of 85 mm Hg. A 24-hour ambulatory pulmonary artery 7F NIH catheter (Gaeltec Ltd) was inserted into the proximal pulmonary artery via the right internal jugular vein. The catheter was plugged into a battery-powered ambulatory recorder (type 7 MPR, Gaeltec Ltd), which was carried by the patient on a shoulder strap. A radial arterial line was also inserted, and a transducer was connected to a second terminal of the recorder box, thus allowing simultaneous continuous measurements of pulmonary and systemic arterial pressures. The patient had a spontaneous syncopal attack during the night recording while lying in bed awake. For 15 minutes before the onset of syncope (Figures 1 and 2), there was a rapid rise in systolic pulmonary artery pressure (from 118 to 126 mm Hg), with a simultaneous gradual decrease in systemic arterial pressure and heart rate. During the recovery phase, there was a simultaneous increase in pulmonary and systemic arterial pressures (Figures 1 and 2). Both of these pressures remained elevated for a period of ≈30 minutes before returning to baseline.

Figure 1. Simultaneous recording of pulmonary and systemic arterial pressures. During syncope, there was a simultaneous decrease in heart rate and in pulmonary and systemic arterial pressures. During presyncopal phase, pulmonary artery pressure was higher than rest of night recording (Figure 2).
Figure 2. During presyncope, a sudden rise in pulmonary arterial pressure was accompanied by a gradual decrease in systemic arterial pressure. In recovery phase, there was a simultaneous rise in both pulmonary and systemic arterial pressures, both of which remained high for a period of ~30 minutes before returning to baseline.
Pulmonary and Systemic Arterial Pressure Changes During Syncope in Primary Pulmonary Hypertension
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