A 51-year-old female smoker with the Eisenmenger syndrome due to an untreated large ostium secundum atrial septum defect and a family history of coronary artery disease was referred to the cardiac catheterization laboratory after several prolonged episodes of chest discomfort.

Coronary angiogram (Panel A) revealed a severe ostial stenosis of the left main coronary artery (LMCA) (arrow). Suspicion of compression of the LMCA (arrow) by the pulmonary artery in a patient with the Eisenmenger syndrome was confirmed by a cardiac 64-slice multidetector computed tomography (MDCT) (Panel B).

The patient underwent a percutaneous coronary intervention (PCI) of the unprotected LMCA with direct stenting with a 4.0/12 Zotarolimus-eluting Endeavor stent (Medtronic) up to 18 atm, resulting in a complete restoration of LMCA patency (arrow) (Panel C).

A cardiac MDCT was repeated to confirm LMCA patency (arrow) and relation of the stent with the PA (Panel D). Dual antiplatelet therapy (aspirin and clopidogrel) was initiated before PCI and prolonged for at least 3 months, after which treatment with aspirin will be sustained.

Left coronary artery compression by an enlarged PA is usually seen with congenital defects such as atrial septal defect, ventricular septal defect, tetralogy of Fallot, or more rarely an isolated persistent ductus arteriosus. A cardiac MDCT allows non-invasive evaluation of structural and functional disease in patients suspected with LMCA compression.

Taking into account the underlying disease and the progressive deterioration of the exercise tolerance in this patient, she will be evaluated for possible heart–lung transplantation.