Images in Anesthesia: Detection of a defect pulmonary artery catheter balloon by transesophageal echocardiography

FIGURE Transesophageal echocardiography (mid esophageal right ventricular inflow-outflow view) demonstrates release of air from the tip of the pulmonary artery catheter (PAC). This image was obtained during inflation of the PAC balloon, while attempting to float the catheter into the pulmonary artery. RA = right atrium; AV = aortic valve.

A 12-yr-old female patient with a history of Ebstein's Anomaly and a ventricular septal defect, developed progressive symptoms of heart failure over six months, prior to hospitalization. During an attempted interventional closure of her ventricular septal defect, the patient had a cardiac arrest. Despite cardiopulmonary resuscitation, cardiac function could not be recovered. She was considered a candidate for cardiac transplantation, and a biventricular assist device was implanted as a bridge to transplantation. During this operation, a pulmonary artery catheter (PAC) was floated into the pulmonary artery. In the process of suturing the arterial cannula of the right ventricular assist device into the pulmonary artery, the PAC was withdrawn into the right atrium. After the cannula was placed, an attempt was made to float the PAC back into the pulmonary artery. Upon inflation of the PAC-balloon, the release of air from the tip of the PAC into the right atrium could be visualized by transesophageal echocardiography (Figure). The catheter

was removed, and inspection confirmed a defect in the PAC-balloon. Most likely, intraoperative manipulation of the PAC along the right-atrial assist device cannula caused the defect. Subsequent intraoperative course was uneventful. Unfortunately, the patient expired due to intracranial hemorrhage following a complicated course in the intensive care unit, before a donor heart became available.

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