A New Complication of Transesophageal Echocardiogram

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INTRODUCTION

Transesophageal echocardiogram (TEE) has become a routine diagnostic procedure, frequently providing invaluable diagnostic information. However, caregivers often overlook the fact that TEE carries a risk of major complications, many of which can present more than 24 hours after the procedure.

CASE PRESENTATION

A 79-year-old gentleman underwent bioprosthetic aortic valve replacement for aortic stenosis. Several days following discharge, he presented back to the hospital in cardiogenic pulmonary edema. Due to concern for malfunction of the recently placed valve, a focused TEE was performed, which showed only mild peri-valvular regurgitation. The patient received conservative management with diuresis, his pulmonary edema gradually improved and he was able to be discharged.

HOSPITAL COURSE

Four days following his TEE, the patient returned with worsening dyspnea and new onset hemoptysis. Pulmonary embolism was considered, but CT angiogram of the pulmonary arteries was negative for this. Over the next 12 hours, he progressed from mild hypoxemia to impending respiratory collapse despite maximal support with non-invasive mechanical ventilation. The patient was emergently intubated and transferred to the intensive care unit. Post-intubation chest X-ray showed complete white-out of the right lung, with mediastinal shift in the same direction, representing resorption atelectasis thought to be secondary to bronchial obstruction.

Flexible bronchoscopy demonstrated an obstructing mass in the right main bronchus, which clinically appeared to be a blood clot. Attempts at removal were unsuccessful, so a rigid bronchoscopy was performed with successful removal of the mass. A small bleeding lesion was seen on the posterior aspect of the bronchus intermedius, which was treated with topical oxymetazoline to achieve hemostasis. Review of the TEE report showed that it was a “Technically limited study – unable to pass TEE probe into stomach” strongly suggesting a tracheal intubation occurred during the procedure.

DISCUSSION

Transesophageal echocardiogram is generally considered to be very safe, with major complications occurring at a rate of 0.2-0.5% and with a mortality rate of less than 0.01%.

It is under-appreciated that many complications present late, often more than 24 hours after the procedure. Accidental intubation of the trachea has been reported as a complication of TEE, as have traumatic lesions in the oropharynx and esophagus with hemorrhage. However, this is the first reported case of bronchial injury with hemorrhage, which led to a significant complication of delayed airway compromise.

Physicians who order or perform TEE need to not only be aware of the immediate complications of this procedure, but also that complications can present in a delayed fashion.

CTA Chest (left) demonstrating near-occluded R mainstem bronchus, with resorptive atelectasis noted on CXR (middle) taken 12hr later. Bronchoscopy image demonstrating obstructing clot (right)