

Control Number: 31

Abstract Category: Clinical Case Challenge in Cardio-Oncology

Title: Minimally invasive mitral valve replacement for severe primary mitral regurgitation in a patient with lung neuroendocrine tumor

ABSTRACT BODY

Background and Purpose

Well-differentiated lung neuroendocrine tumors (NET) comprise 1-2% of all primary lung cancers. Surgical resection is the treatment of choice for localized carcinoid tumors, and is the only curative option for resectable lung carcinoids. However, achieving a surgical cure may be challenging. We present a case of a patient with lung NET with carcinoid syndrome whose surgical candidacy was complicated by severe mitral regurgitation, possibly due to carcinoid syndrome.

Case Description and Outcomes

A 66-year-old woman presented with 6 months of persistent cough. Cross-sectional imaging demonstrated stage IIIa (T3N2M0) well-differentiated, low-grade neuroendocrine tumor (NET) of the left upper lobe of the lung, measuring 5.3x5.0cm, with encasement of the proximal thoracic descending aorta, pulmonary trunk, and left pulmonary artery. Urinary 5-HIAA and chromogranin A levels were markedly elevated. The decision was made to pursue surgical resection. Pre-operative transthoracic echocardiogram (TTE) revealed severe mitral regurgitation (MR) with preserved ejection fraction. One month prior, TTE had demonstrated mild to moderate MR. The patient underwent transesophageal echocardiogram which demonstrated a moderately thickened mitral valve (MV) with mild hockey-stick deformity of the anterior MV leaflet, and restriction of the posterior leaflet with malcoaptation resulting in severe, eccentric, posteriorly directed MR (EROA 0.48cm², RVol>60mL). Due to her valvular heart disease, she was deemed too high of surgical risk for tumor resection. The patient was discussed at a multi-disciplinary conference, and she subsequently underwent a minimally invasive, high-risk mitral valve replacement with a 27mm St. Jude porcine MV. The patient tolerated the procedure without complication.

Discussion

Lung NETs rarely produce carcinoid syndrome, and carcinoid syndrome characteristically produces right-sided valvular lesions. However, left-sided valvular involvement has been described in patients with lung NET or PFO. In this case, it is conceivable that hormonal secretion contributed to severe left-sided valvular disease. This unique case illustrates the utility of minimally invasive valvular replacement in patients who are not candidates for open surgery.

References

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2. Pellikka, PA, et al. "Carcinoid heart disease. Clinical and echocardiographic spectrum." *Circulation* 87.4 (1993): 1188-1196.