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Title: CANCER-ASSOCIATED NON-BACTERIAL THROMBOTIC ENDOCARDITIS AFFECTING RIGHT HEART VALVES AS POTENTIAL CAUSE OF PULMONARY EMBOLISM

Abstract Type: Poster Presentation

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Background:

Cancer-associated non-bacterial thrombotic endocarditis (Ca-NBTE) affects mainly mitral and aortic valves with very rare involvement of the right heart valves. Premortem description of these patients is limited to few case reports.

Aims:

To present first clinical series of patients with right heart valves affected by Ca-NBTE describing underlying cancers, type of valve lesions and embolic complications.

Methods:

An electronic search of Mayo Clinic records (03/31/2002-06/30/2022) with the subsequent manual review was performed to identify adult patients with echocardiographically detected NBTE, active cancer, and no infectious endocarditis or lupus anticoagulant/antiphospholipid antibodies

Results:

Out of 115 identified patients with Ca-NBTE (mean age 63.2 ± 9.7 years, 66.1% female), there were 8 cases (7.0%) affecting right heart valves (mean age 64.5 ± 12.1 years, 3 females) with underlying cancer: pancreatic (n=3), lung (n= 2), genitourinary (n=1), gastric (n=1) and neck sarcomatoid carcinoma (n=1). Tricuspid valve (TV) was affected in 8 patients and pulmonic valve (PV) in one case; 4 patients had Ca-NBTE limited only to PV, two patients had mitral valve and TV, one patient had mitral, aortic and TV, and one patient with pancreatic cancer had all four valves (mitral, aortic, TV, and PV) affected by NBTE.

Six patients had embolic complications to the brain with one patient in that group also experiencing emboli to the kidney and spleen. Out of 4 patients with NBTE limited to TV, two still had brain emboli, one had only pulmonary embolism, and one patient had no embolic complications.

4 patients had pulmonary embolism as an embolic complication:

Patient 1 with pancreatic cancer with all 4 valves affected was diagnosed with concurrent pulmonary embolism and lower extremity subacute DVT.

Patient 2 with thrombotic multi lobed mass on TV had concurrent finding of multiple acute and subacute pulmonary emboli in both lungs. Lower extremity US with chronic DVT.

Patient 3 had thrombotic changes involving tricuspid valve presenting as complex mass beneath the valve. CT scan of the abdomen showed right lower lobe pulmonary embolism.

Patient 4 with both mitral and TV involvement had concurrent pulmonary embolism and DVT.

Summary/Conclusion:

Ca-NBTE affecting right heart valves represent 7% of all cases. In half of those cases, NBTE was limited to TV. Cancer profile was similar to those reported in left heart valve affection. Emboli complications were noticed within the brain, systemic arterial circulation, and pulmonary artery. Right-sided thrombotic endocarditis may be

potential overlooked cause of pulmonary embolism and may be considered in patients with high-risk malignancy if lower extremity ultrasound is negative for DVT.

Keywords: Pulmonary embolism, Cancer, Thrombosis