The column in this issue is supplied by Dr. H. Alejandro Preti, M.D., a clinical associate professor of medicine at Baylor College of Medicine and an associate member of the Houston Methodist Research Institute in Houston. Dr. Preti earned his medical degree from the Facultad de Medicina, Universidad de Buenos Aires, Argentina, in 1985. After completing two consecutive residencies in internal medicine at the Center for Medical Education and Clinical Research in Buenos Aires and at Baylor College of Medicine in Houston, Dr. Preti completed a fellowship in medical oncology at The University of Texas M. D. Anderson Cancer Center. In addition to his academic and clinical roles, Dr. Preti is the founder and president of CancerAdvice.com

H. A. Preti, M. D.

PRACTICAL PEARLS IN ONCO-CARDIOLOGY

H. Alejandro Preti, M. D.

Houston Methodist Research Institute, Houston Methodist Hospital, Houston, Texas

- While 51% of cancer patients die of recurrent disease, about 33% die of heart disease. By the year 2022, there will be an estimated 18 million cancer survivors in the United States.
- In 15% to 22% of survivors, radiation therapy to the heart in doses greater than 3500 cGy has been correlated with increased incidences of congestive heart failure, coronary artery disease, and valvular heart disease 20 years after completion of treatment.
- The key molecular mediator of anthracycline-induced cardiotoxicity, the primary cause of chemotherapy induced heart damage, is topoisomerase-2 beta. Reduction of anthracycline-induced cardiotoxicity can be achieved by continuous infusion administration, liposome encapsulation, use of a less cardiotoxic derivative, or use of a protective agent such as dexrazoxane. Since speckle tracking echocardiogram (ST echo) is more sensitive than 2-dimensional (2D) echo, reduction of longitudinal strain by ST echo can anticipate a decrease in left ventricular ejection fraction 3 months earlier than when measured by 2D echo.
- Heart involvement due to metastatic cancer is about 40 to 100 times more common than primary tumors of the heart. Melanoma is the most common source of endocardial metastases to the left side of the heart. Hepatocellular carcinoma and renal cell carcinoma are more frequent on the right side of the heart. The pericardium is the most commonly affected site by direct extension from mesothelioma, lung cancer, or breast cancer.
- Cardiac myxomas are the most common primary benign tumors of the heart; they involve the left atrium 75% of the time and rarely involve the ventricles. Five percent of myxomas are familial and associated with Carney complex. Myxomas are surgically removed to prevent obstruction, embolization, or sudden death. Supraventricular arrhythmia is a common postoperative complication.
- Cardiac sarcomas are the most common primary malignant tumors of the heart and can present with right heart involvement and pericardial effusion, left heart involvement and flow obstruction, or pulmonary artery involvement mimicking a pulmonary embolus. Complete resection and long-term survival are possible in right heart sarcomas, especially after preoperative chemotherapy. Left heart sarcomas usually require urgent surgery because of flow obstruction, and auto-transplantation renders a 28% survival at 2 years. Patients with pulmonary artery sarcoma have a median survival of 70 months after surgery.
- Renal cell carcinomas are the only metastatic tumor to the heart in which surgical resection may benefit the patient. Cardiac lymphomas are rare but important to diagnose because they do not require surgery and can be cured with chemotherapy.