

UCLA

UCLA Previously Published Works

Title

Bronchoalveolar lung carcinoma manifesting itself as a swinging heart.

Permalink

<https://escholarship.org/uc/item/2tp2x5tc>

Journal

Texas Heart Institute journal, 38(6)

ISSN

1526-6702

Authors

Papazian, Jenny
Yang, Eric H
Thomas, Joseph L

Publication Date

2011

Peer reviewed

Bronchoalveolar Lung Carcinoma

Manifesting Itself as a Swinging Heart

Jenny Papazian, MD
Eric H. Yang, MD
Joseph L. Thomas, MD

A 59-year-old man with a history of resected adrenal adenoma presented with a 2-week history of progressive dyspnea on exertion, decreasing exercise tolerance, and pleuritic chest pain. On physical examination, his heart rate was 106 beats/min and his blood pressure was 79/61 mmHg. His jugular venous pressure was 12 cm H₂O. Distant heart sounds and scattered rhonchi were heard on chest auscultation. An electrocardiogram showed sinus tachycardia, low frontal voltage, and electrical alternans (Fig. 1). A transthoracic echocardiogram showed a 3-cm circumferential pericardial effusion (Fig. 2), with both right atrial systolic and right ventricular diastolic collapse along with substantial pendular motion (Fig. 3). The patient underwent emergent pericardiocentesis. After 900 mL of hemorrhagic fluid was drained, his clinical condition improved. Results of cytology (Fig. 4) and electron microscopy (Fig. 5) revealed bronchoalveolar lung carcinoma. The patient was discharged from the hospital and began an outpatient chemotherapy regimen of carboplatin and pemetrexed.

Comment

Pericardial effusion and tamponade are known complications of many advanced malignancies; however, an initial presentation of malignancy with tamponade is rare.¹ Investigators in several case series have reported that non-small cell adenocarcino-

Section Editor:

Raymond F. Stainback, MD,
Department of Adult
Cardiology, Texas Heart
Institute at St. Luke's
Episcopal Hospital, 6624
Fannin St., Suite 2480,
Houston, TX 77030

From: Department of
Medicine (Dr. Papazian)
and Division of Cardiology,
Department of Medicine
(Drs. Thomas and Yang),
Harbor-UCLA Medical
Center, Torrance, California
90509

Address for reprints:

Eric H. Yang, MD, Division
of Cardiology, Department
of Medicine, University of
California at Los Angeles,
100 Medical Plaza, Suite
630, Los Angeles, CA
90095

E-mail:

Datsunian@gmail.com

© 2011 by the Texas Heart®
Institute, Houston

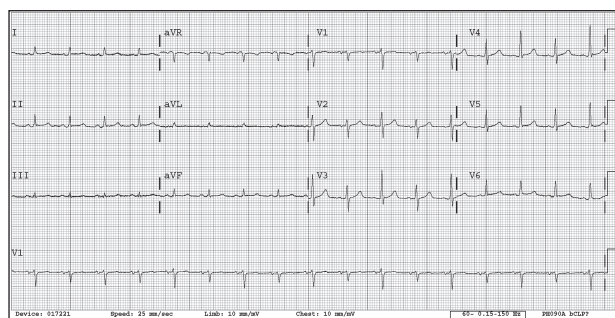


Fig. 1 Twelve-lead electrocardiogram shows sinus tachycardia, low frontal voltage, and variation in the amplitude of the P wave and QRS complexes in successive beats, consistent with electrical alternans.

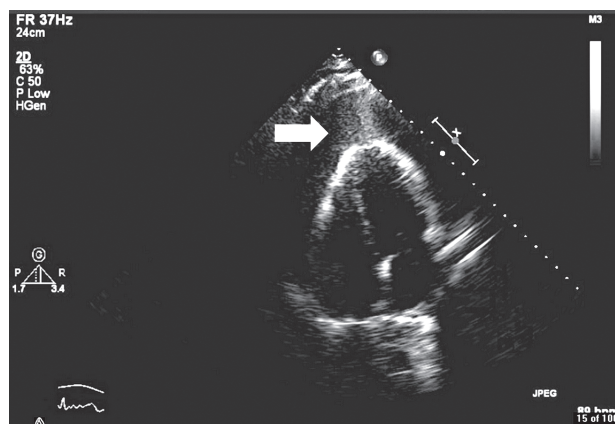


Fig. 2 Transthoracic echocardiogram (apical 4-chamber view) shows a 3-cm circumferential pericardial effusion (arrow).

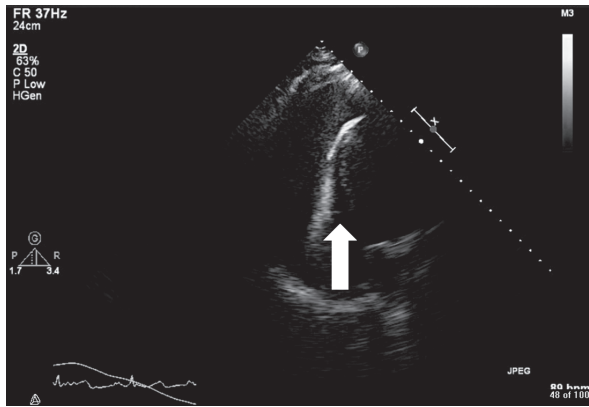


Fig. 3 Transthoracic echocardiogram (apical 4-chamber view) shows right ventricular diastolic collapse (arrow) consistent with echocardiographic evidence of cardiac tamponade.

Real-time motion image is available at www.texasheart.org/journal.

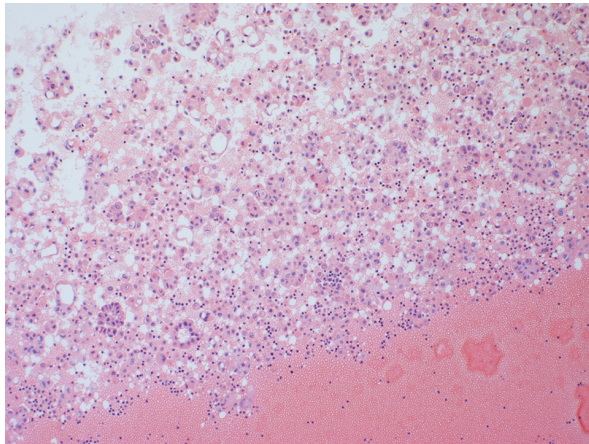


Fig. 4 Toluidine-stained cell block prepared from pericardial fluid shows pleomorphic tumor cells with glandular formation, consistent with adenocarcinoma (orig. $\times 10$).

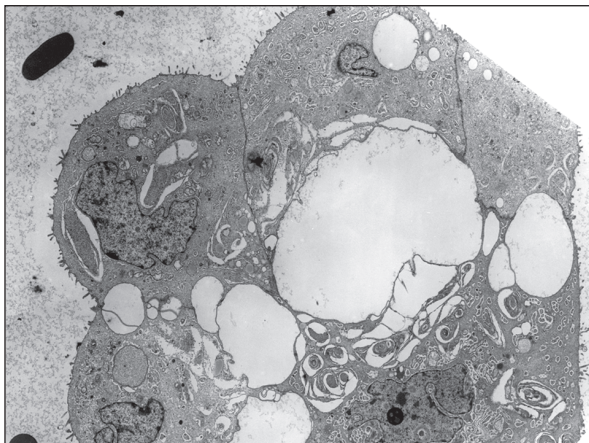


Fig. 5 Electron microscopy shows multiple lamellar bodies formed by tumor cells, consistent with bronchoalveolar carcinoma of the lung.

ma is the most common malignancy to present with tamponade. Metastases to the heart and pericardium develop mainly from the spread of tumor cells to the mediastinal lymph nodes, with subsequent spread to the epicardial lymphatic plexus. The slow accumulation of large volumes of fluid may then occur, due to obstruction of the lymphatic circulation. Other mechanisms include hematogenous spread, direct tumor invasion, or penetration through disseminated lesions on the mediastinal pleura adjacent to the pericardium.¹⁻³ Recurrent malignant pericardial effusion occurs in up to 40% of patients after pericardiocentesis.⁴ In addition to pericardiotomy, treatment options to prevent reaccumulation include the instillation of sclerosing agents such as bleomycin, carboplatin, and minocycline, and more recently thiotepa.^{4,5} Retrospective data comparing surgical drainage with pericardiocentesis and intrapericardial sclerosis with thiotepa showed similar outcomes, including complication rates with a median survival of 97 days for all patients.⁶

Acknowledgment

The authors thank Thu Tran, MD, for her assistance in gathering essential data for this manuscript.

References

1. Haskell RJ, French WJ. Cardiac tamponade as the initial presentation of malignancy. *Chest* 1985;88(1):70-3.
2. Chiles C, Woodard PK, Gutierrez FR, Link KM. Metastatic involvement of the heart and pericardium: CT and MR imaging. *Radiographics* 2001;21(2):439-49.
3. Muir KW, Rodger JC. Cardiac tamponade as the initial presentation of malignancy: is it as rare as previously supposed? *Postgrad Med J* 1994;70(828):703-7.
4. Martinoni A, Cipolla CM, Civelli M, Cardinale D, Lamantia G, Colleoni M, et al. Intrapericardial treatment of neoplastic pericardial effusions. *Herz* 2000;25(8):787-93.
5. Martinoni A, Cipolla CM, Cardinale D, Civelli M, Lamantia G, Colleoni M, Fiorentini C. Long-term results of intrapericardial chemotherapeutic treatment of malignant pericardial effusions with thiotepa. *Chest* 2004;126(5):1412-6.
6. Girardi LN, Ginsberg RJ, Burt ME. Pericardiocentesis and intrapericardial sclerosis: effective therapy for malignant pericardial effusions. *Ann Thorac Surg* 1997;64(5):1422-8.