

Oesophageal cancer with myocardial metastasis complicated by ventricular fibrillation: the role of echocardiography

Przerzut raka przełyku do mięśnia sercowego powikłany migotaniem komór: znaczenie echokardiografii

Can Yucel Karabay, Gonenc Kocabay, Cuneyt Toprak, Cevat Kirma

Department of Cardiology, Kartal Kosuyolu Heart Education and Research Hospital, Istanbul, Turkey

Abstract

Myocardial metastasis from oesophageal cancer is very rare, and is usually detected as part of widespread metastases in the terminal stage. It is rare to detect a solitary metastasis. We present a case of solitary myocardial metastasis from distal oesophagus complicated by ventricular fibrillation.

Key words: myocardial metastasis, oesophageal cancer, echocardiography

Kardiol Pol 2012; 70, 3: 296–297

Myocardial metastasis from oesophageal cancer is very rare; it is usually detected as part of widespread metastases in the terminal stage. It is rare to detect a solitary metastasis [1, 2]. In this report, we present a case of solitary myocardial metastasis from distal oesophagus complicated by ventricular fibrillation.

A 46 year-old man was admitted to our emergency unit for loss of consciousness. Ventricular fibrillation was observed during monitoring. He was successfully treated by an external 200 J shock. Medical history showed that he had been diagnosed with oesophageal cancer two months previously which was histologically proven to be a squamous cell carcinoma. Laboratory findings revealed normochrom normocytic anaemia, and other investigations were within normal limits.

In a thorax multislice computed tomography (CT) scan, there was a thickening in the distal part of the oesophagus, and a mass 33 × 46 mm in diameter in the gastro-oesophageal junction (Fig. 1). CT scans did not show a definitive mass in the heart. Thorax and abdominal CT did not show any metastasis in the mediastinal lymph node and lung and abdominal parenchymas. Echocardiographic examination revealed that there was a mass 31 × 41 mm in diameter adjacent

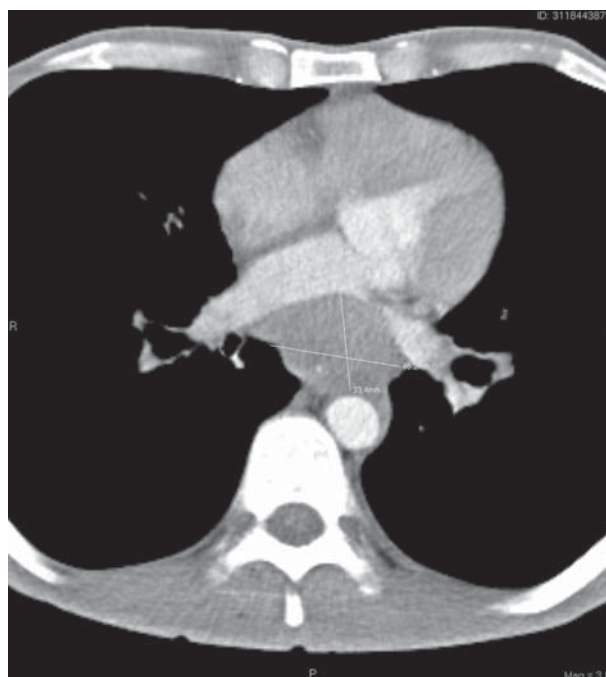


Figure 1. Thorax computed tomography scan revealed a mass 33 × 46 mm in diameter in the gastro-oesophageal junction

Address for correspondence:

Gonenc Kocabay, MD, Hurriyet Mahallesi, Uzmanlar Caddesi, Reyhan Sokak, Burcu Temel Sitesi, E Blok Kat 5 Daire 12, Yakacik, Kartal, Istanbul, Turkey, tel/fax: 00 90 532 518 00 35, e-mail: gonencocabay@yahoo.com

Copyright © Polskie Towarzystwo Kardiologiczne

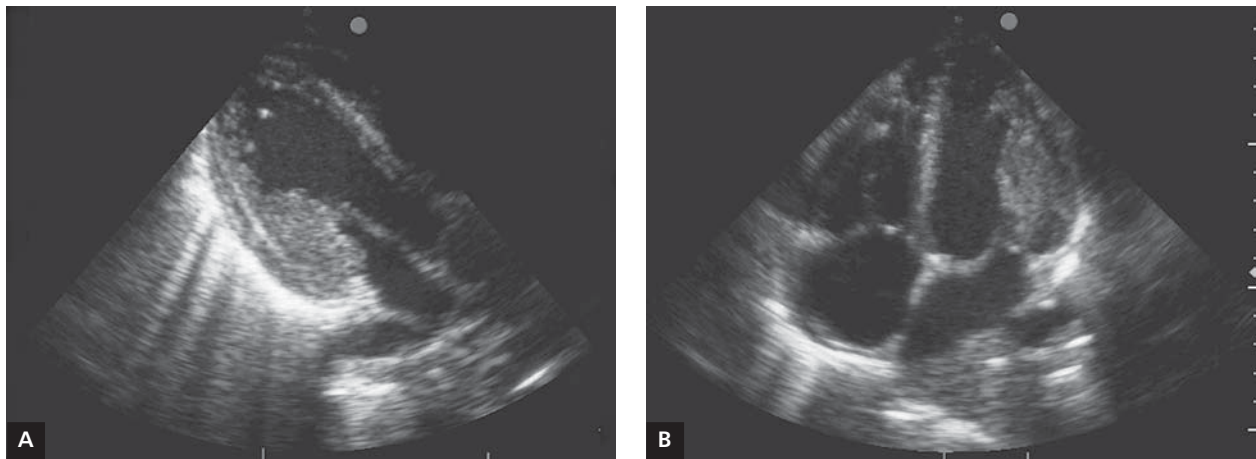


Figure 2A, B. Echocardiography showed a mass 31 × 41 mm in diameter adjacent to the left atrium, and a mass 58 × 32 mm in the left ventricle lateral wall

to the left atrium, and a mass 58 × 32 mm in the left ventricle lateral wall (Figs. 2A, B).

Metastatic neoplasms of the heart are very rare [2]. Additionally, when the heart is affected, metastatic disease is usually widespread in the body [3]. In cases of oesophageal cancer, tumour spread to the heart is usually caused by direct invasion. Myocardial metastasis should be formed through the bloodstream. Several routes have been considered for metastasis to the heart. One of these involves tumour cells entering the pulmonary veins and passing to the left atrium and the left ventricle. Another route is invasion of the thoracic duct and via the azygous system to the superior vena cava and right side of the heart [4].

In the presented case, although there was a mass adjacent to the left atrium, there was no direct invasion or pericardial effusion. Left ventricle lateral wall myocardial metastasis was formed by the haematological route via pulmonary vein invasion.

The most frequently observed abnormalities associated with cardiac metastasis are congestive heart failure, dysrhythmia, electrocardiographic changes, pericardial effusion and cardiomegaly. Cardiac lesions are often silent, and fatal symptoms may arise suddenly [5]. Unexplained cardiac dysrhythmia in cancer patients with no previous history of heart disease

should alert the physician to the possibility of cardiac metastases. Damage to the conducting system of the heart is considered to cause severe dysrhythmia [3]. Probably, in the presented case, sophisticated diagnostic imaging such as multislice CT and magnetic resonance imaging was not reliable in detecting cardiac metastasis because myocardial metastases are often too small. As a result, echocardiography is the most useful technique to detect metastases.

Although the incidence of myocardial metastasis is low, physicians should be aware that ventricular fibrillation might develop in patients who have cardiac metastases.

Conflict of interest: none declared

References

1. Maeda M, Goto T, Harigai M et al. Myocardial metastasis from squamous cell carcinoma of the esophagus. *Gen Thorac Cardiovasc Surg*, 2009; 57:440–445.
2. Bussani R, De-Giorgio F, Abbate A et al. Cardiac metastasis. *J Clin Pathol*, 2007; 60: 27–34.
3. Kataoka M, Shigemitsu K, Tanabe S et al. Sudden death from metastatic esophageal cancer to the ventricular septum. *Jpn J Thorac Cardiovasc Surg*, 2005; 53: 365–368.
4. Morris LM. Metastases to the heart from malignant tumors. *Am Heart J*, 1927; 3: 219–229.
5. Smith C. Tumors of the heart. *Arch Pathol Lab Med*, 1986; 110: 371–374.