Chapter 33

CARDIAC METASTASIS

Serkan AKIN[1]

INTRODUCTION

Heart is an uncommon metastatic site for neoplasms. Primary malignant tumors of heart are extremely rare. Metastasis to heart is 20-40 times more common than primary tumors (1). The incidence of cardiac metastasis is between 0.7% and 3.5% in the general population, and up to 14.2% in heavily metastatic patients (2). Cardiac metastases should prompt suspicion of disseminated disease.The incidence of cardiac metastasis is proportionately increased because of advanced diagnostics such as increased use of echocardiogram in recent years.

Any kind of tumor can spread to heart, however the anatomic site of primary tumor, stage and individual tumor and host biology affects the involvement of heart. Most frequently metastasizing tumors to heart are the lung, breast and hematological malignancies due to their relatively high prevalence. Additionally, the melanoma is the most familiar cancer that metastasize to heart (3).

Four possible pathways are existed to reach heart for tumors; hematogenous seeding, retrograde lymphatic spread, direct extension and transvenous way. These pathways are summarized in Table 1. Hematogenous spread generally effects myocardium or endocardium and it is common in patients with melanoma, lymphoma and sarcoma. Lymphatic spread is common in patients with lung and breast cancer, this way will usually effect pericardium. Mediastinal tumors like lung, breast, esophagus and mesothelioma can directly extend and metastasize to firstly pericardium and inner layers in turn. Renal carcinoma, hepatic tumors and uterine sarcomas use inferior vena cava, whereas lung and thyroid cancers might extend through pulmonary vein and superior vena cava to reach the cavity of heart (4).

CLINICAL FEATURES

Cardiac metastasis is usually asymptomatic. Some cases are diagnosed by the autopsy. There are non-specific clinical manifestations. The clinical situation de-

[1] Dr. Öğr. Üyesi, Hacettepe Üniversitesi Kanser Enstitüsü, drserkanakin@gmail.com

lesion obstructing blood flow. Depending on the extent of disease, resection with valvular replacement may be helpful in case of valvular involvement.

CONCLUSION

Because of the advanced stage of malignancy that metastasize to heart, the prognosis is usually poor. Patients are usually asymptomatic. Diagnosis can be made with using noninvasive technics such as echocardiography; however histological diagnosis is the gold standard to characterize tissue. Priority of treatment is symptom palliation and improvement of quality of life.

Tablo 1. Summary of Metastatic Pathways

Pathway	Hematogenous	Lymphatic	Transvenous	Direct
Common tumor type	Melanoma, lymphoma and sarcoma	Lung, breast	Renal and hepatocellular carcinoma, leiomyosarcoma of uterus, mucinous tumors	Mediastinal and pleural tumors,
Involvement site	Myocardium and endocardium	Pericardium and epicardium	Right atrium	Pericardium and myocardium

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