Diffuse Large B-cell Lymphoma Masquerading as STEMI

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Introduction

Cardiac involvement of a lymphoma is a rare manifestation of the disease and mostly diagnosed with autopsy. It is defined as primary cardiac lymphoma with most of the tumor mass locating in the heart and secondary cardiac lymphoma with the invasion of the heart by different mechanisms. The objective of this poster is to increase clinical awareness by reporting a case with Diffuse Large B-Cell Lymphoma (DLBCL) masquerading as STEMI.

Case Presentation

A 65-year-old male with a history of DLBCL refractory to chemotherapy, initially presented with a low-grade fever and shortness of breath. His ECG revealed ST elevations in leads I, aVL, V2, V3, with associated rise in serum Troponins consistent with an antero-lateral STEMI (Figure 1). Selective coronary angiogram showed 75-85% stenosis of the left anterior descending artery, to which successful percutaneous coronary intervention with drug eluting stents was performed. Consecutive ECGs continue to demonstrate STEMI. Further ventricular assessment with transthoracic echocardiography demonstrated an ejection fraction of 45%, moderate right ventricular hypokinesis, plethoric IVC, moderate loculated pericardial effusion anteroapically measuring approximately 1.6 cm with fibrinous echodensities within the pericardial space (Figure 2). His course was further complicated by acute hypoxic respiratory failure requiring mechanical ventilator support, oliguric acute renal insufficiency requiring renal replacement therapy, and cardiogenic shock requiring vasopressor and inotropic support. Given persistent multi-organ dysfunction unamenable to life support therapies, patient was transitioned to comfort care measures. Post-mortem analysis showed large, firm tissue mass involving the anterior mediastinum and pericardium consistent with tumor with extensive amount of abnormal tan-yellow fatty-fibrous tissue adherent to the both heart and pericardium (Figure 3). Histopathology specimens obtained from transverse sections were consistent with lymphoma cells infiltrating the epicardium (Figure 4).

Figures

Figure 1. ECG demonstrates ST elevation in lead I, aVL, V2, V3.

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Figures

Figure 3. Large firm tissue mass involving the anterior mediastinum and pericardium consistent with tumor (A, B). Fibrofatty suspected malignant tissue adherent to epicardial surface of heart (C).

Figure 4. H&E staining of specimens obtained from transverse sections demonstrates lymphoma cells infiltrating the epicardium

Discussion

Primary cardiac lymphomas (PCL)

- 0.5% of all lymphomas and 1.3% to 2% of all heart tumors.
- usually non-Hodgkin lymphomas, most often DLBCL

Secondary cardiac lymphomas (SCL)

- cardiac invasion in up to 28% of all lymphomas
- 13.6% of the metastatic tumors of the heart
- usually non-Hodgkin lymphomas (T and B cell lymphomas)
- pericardium > myocardium > endocardium
- tamponade is by far the most frequent manifestation
- pathways on invasion are hematogenic, lymphagenic or direct
- Poor prognosis

Conclusions

This patient developed secondary cardiac DLBCL mimicking STEMI and causing a constrictive-effusive heart failure as a consequence of infiltration of both the pericardial and epicardial surfaces. DLBCL is the most common cause of cardiac lymphomas. Cardiac symptoms in patients with non-Hodgkin's lymphoma, particularly with DLBCL should be alarming for an early diagnosis and treatment of the cardiac lymphoma.

References

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