中文題目：轉移性心臟鱗狀細胞癌導致心電圖ST節段上升：一病例報告
英文題目：Metastatic squamous cell carcinoma to the heart: an unusual cause of ST elevation -- A case report
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Case Report:

A 54-year-old man with a known history of squamous cell carcinoma of lung presented to our emergency department complaining of several episodes of severe chest pain within three days.

One year before presentation, squamous cell carcinoma of lung was diagnosed with an initial presentation of left chest wall pain and cough. With an initial staging of cT4N2, the patient received concurrent chemoradiotherapy. Distant metastases to brain, bone and bilateral renal were noted during regular follow-up.

Three days before presentation, intermittent chest tightness and pain was noted. The pain was not clearly related to exercise and had gradually increased and become persistent and intolerable half an hour before presented to our emergency department.

On examination, he appeared frail. An electrocardiogram (ECG) was obtained, which showed frequent premature ventricular complex and marked ST-segment elevation (STE) in the anteroseptal and lateral leads. No prior ECG was available for comparison. He was taken emergently to the cardiac catheterization laboratory for a presumed diagnosis of STE myocardial infarction (STEMI). He was found to have one-vessel coronary artery disease and a drug-eluting stent was deployed to the mid-left anterior descending artery (LAD). Concerningly, the follow-up ECG showed persistent STE. A transthoracic echocardiogram showed a hypo-echoic lesion at the mid-intraventricular septum. A whole body positron emission tomography (PET) scan showed a hypermetabolic lesion at his left upper lobe of lung (standard uptake value (SUV) max=9.2) with multiple hot areas at heart (SUV max=4.7), left hilar nodes and long bones.

Despite the percutaneous coronary intervention, the STE persisted while the serial cardiac biomarkers remained negative. It was later believed that the STE was likely due to tumor infiltration in to the left ventricle, and unlikely to be the classic STEMI due to acute coronary syndrome with resultant occlusive thrombus.

Discussion:

The possibility of cardiac metastasis should be considered in any patient with a malignancy and new cardiac symptoms, particularly with distant metastases or thoracic involvement. ECG can be a useful, although nonspecific, tool, with the most common abnormalities being nonspecific ST-T wave changes and new atrial arrhythmias.

ST elevation due to metastatic lesions within the myocardium is characterized by the persistence of ST-segment changes and absence of the typical evolutionary pattern of infarct, such as the development of Q waves in consecutive ECGs. The mechanism of ST elevation is unclear; however, autopsy findings in one study demonstrated that transmural myocardial damage by tumor infiltration is thought to be the cause. Furthermore, tumor cells were noted to invade the myocardium without evidence of myocardial necrosis. This observation might explain the lack of typical evolutionary changes that are seen with acute myocardial infarction. This finding may help differentiate acute injury pattern from ischemia vs. tumor infiltration.

In any cancer patient with cardiac symptoms or ECG changes, it is important to consider the possibility of cardiac metastasis. Multimodality imaging with MRI, positron emission tomography-CT, and echocardiography plays a pivotal role in the diagnostic workup and management.