Angiosarcoma Pericardium

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Section: Chest imaging
Area of Interest: Cardiovascular system
Imaging Technique: PET-CT
Case Type: Clinical Cases
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Patient: 45 years, male

Clinical History:

A 45-year-old male with a history of chest pain, breathlessness since last three months gradually increasing. On and off low-grade fever which is increasing gradually. Mild loss of weight compared with last month. No other symptoms.

Imaging Findings:

Initially, a chest radiograph was done which was normal three months back. Later one month back the chest radiograph shows mild cardiomegaly. Patient was subsequently referred for further evaluation. CECT Chest was done which shows mild pericardial thickening with mild pericardial effusion.

Patient was referred to PET-C T in the PUO Pyrexia of unknown Protocol.

Whole-body PET-CT from the base of skull to mid-thigh shows diffuse irregular pericardial thickening with pericardial effusions. Small pericardial nodules were also noted within. This pericardial thickening and nodules show diffuse increased uptake along the pericardium. The pericardial fluid shows no uptake.

The SUV max values were 6-12 in different locations of the pleural thickening and nodules. Histopathological findings are suggestive of the Angiosarcoma Pericardium.

Discussion:

Primary malignant tumours of the pericardium are rare, and most primary malignant pericardial tumours are mesotheliomas. Secondary involvement of the pericardium is more common, and it is often caused by direct invasion of cardiac and lung neoplasms or by the metastatic spread. Angiosarcoma is the most frequent primary cardiac malignant tumour. However, primary pericardial angiosarcoma is extremely rare, and it has a poor prognosis.

Enhanced CT scan delineate the outline and blood supply of the tumour and MRI has excellent diagnostic advantages regarding tumour delineation and clarification of the tumour location, its local spread, and the involvement of adjacent structures. However final diagnosis depends on biopsy.

PET-CT is the important modality for the diagnosis and staging and restaging of the Sarcomas which will be helpful in prognosis.

On immunohistochemical analysis, the tumour is positive for CD31, CD34, and Factor VIII. In our case, it was positive for CD31, CD34, and SMA and negative for desmin [2]. Angiosarcoma grows rapidly with local invasion and distant metastasis. Constriction of the pericardium is caused by both the tumour itself and the hemorrhagic pericardial fluid. Tumour growth around the heart can also lead to constriction of the pericardium.
The prognosis of patients with angiosarcoma is extremely poor. The mean survival is 6-14 months, and few patients survive beyond 14 months [1]. This tumour responds poorly to chemotherapy and radiotherapy. Pericardiotomy, radiation therapy, and chemotherapy are associated with prolonged survival.

**Differential Diagnosis List:** Angiosarcoma Pericardium, Tuberculosis, Metastasis, Myxoma, Lymphoma, Myxosarcoma, Rhabdomyosarcoma

**Final Diagnosis:** Angiosarcoma Pericardium

**References:**


**Figure 1**

*Description:* CT Whole Body showing diffuse irregular pericardial thickening with subtle small nodules.

*Origin:* Yashoda hospitals. Somajiguda Hyderabad
Figure 2

Description: Images showing diffuse increased uptake in the pericardium with increased uptake of SUV Max ranging from 5.6 to 11.2. Moderate amount of the pericardial effusion noted. Rest of the body shows no distant metastases. **Origin:** Yashoda hospitals. Somajiguda Hyderabad
Figure 3

Description: Images showing diffuse increased uptake in the pericardium with increased uptake of SUV Max ranging from 5.6 to 11.2. Moderate amount of the pericardial effusion noted. Rest of the body shows no distant metastases. Origin: Yashoda hospitals. Somajiguda Hyderabad