

Anterior Mediastinal Capillary Hemangioma: A Very Rare Finding

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DOI: [10.36347/sjmcr.2023.v11i05.022](https://doi.org/10.36347/sjmcr.2023.v11i05.022)

| Received: 04.03.2023 | Accepted: 15.04.2023 | Published: 07.05.2023

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Abstract

Case Report

Hemangiomas are benign vascular tumors. Their location in the mediastinum represents a very rare finding. The definite diagnosis is sometimes difficult to make due to nonspecific features on single-phase contrast-enhanced computed tomography (CT) images. Our case shows a 53-year-old male that had presented with chest pain and dyspnea. On the dynamic CT study, there was a mediastinal mass that showed peripheral nodular enhancement on early phase images and progressive centripetal fill-in on delayed phase images. Hemangioma was preoperatively diagnosed on the basis of this characteristic CT appearance.

Keywords: Capillary hemangioma, Mediastinum, Neoplasm, vascular tumor, benign.

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INTRODUCTION

Benign vascular tumors of the anterior mediastinum are rare [1]. Among these benign tumors, we find mediastinal hemangiomas which are uncommon benign vascular tumors and account for approximately 0.5% of all mediastinal tumor [2].

Imaging, especially dynamic imaging shows an enhancing mass that may be associated with calcified phleboliths [3].

They are multiple histological varieties of hemangiomas which are classified into cavernous, capillary and venous types according to the size of their vascular spaces. More than 90% cases are composed of cavernous or capillary types [1].

We hereby report a symptomatic patient with an anterior mediastinal masse showing imaging characteristics of hemangioma.

CASE PRESENTATION

A 53-year-old woman presented with thoracic pain and a history of mild dyspnea evolving for the past 4 months. The patient had no history of smoking. The physical examination didn't note any remarkable abnormality. A chest radiography was performed, showing a bulging mass in the left mediastinum causing right-sided tracheal deviation (Figure 1).



Figure 1: Frontal chest radiograph showing a left mediastinal mass (orange star) causing right-sided tracheal deviation

A dynamic CT study was performed to better the characterization of the mass, using an intravenous administration of 100 mL of contrast at the rate of 4 mL/s with an automated injector. Spiral scanning was done repeatedly at 30 seconds, 1 minute and 3 minutes after injection.

The pre-contrast CT scan showed a low attenuation and circumscribed mass in the anterior mediastinum. The interface between the mass lesion

and the thyroid gland was clear, excluding a thyroid mass (Figure 2).

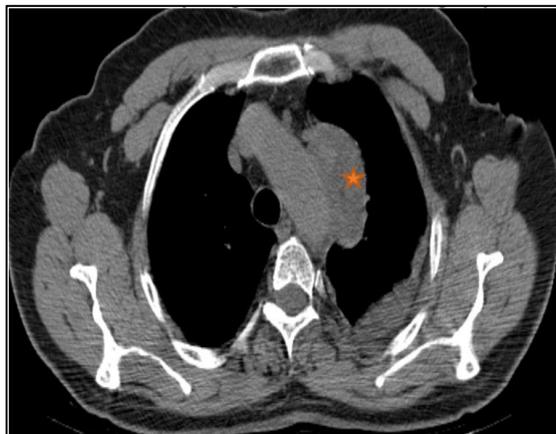


Figure 2: Chest CT in axial section showing a low attenuation and circumscribed mass in the anterior mediastinum (Orange star)

The post contrast CT scan showed initially peripheral enhancement with gradually central fill-in on the delayed phase images (Figure 3).



Figure 3a: Chest CT in axial section post contrast showing initially peripheral nodular enhancement. (Orange star)



Figure 3b: Chest CT in axial section post contrast in the delayed phase showing gradually central fill-in of the mass

The patient then underwent MRI scanning. It showed a high signal T2 mass, rapidly enhancing in the

post contrast scan, showing the same enhancement pattern found on the CT scan (Figure 4).

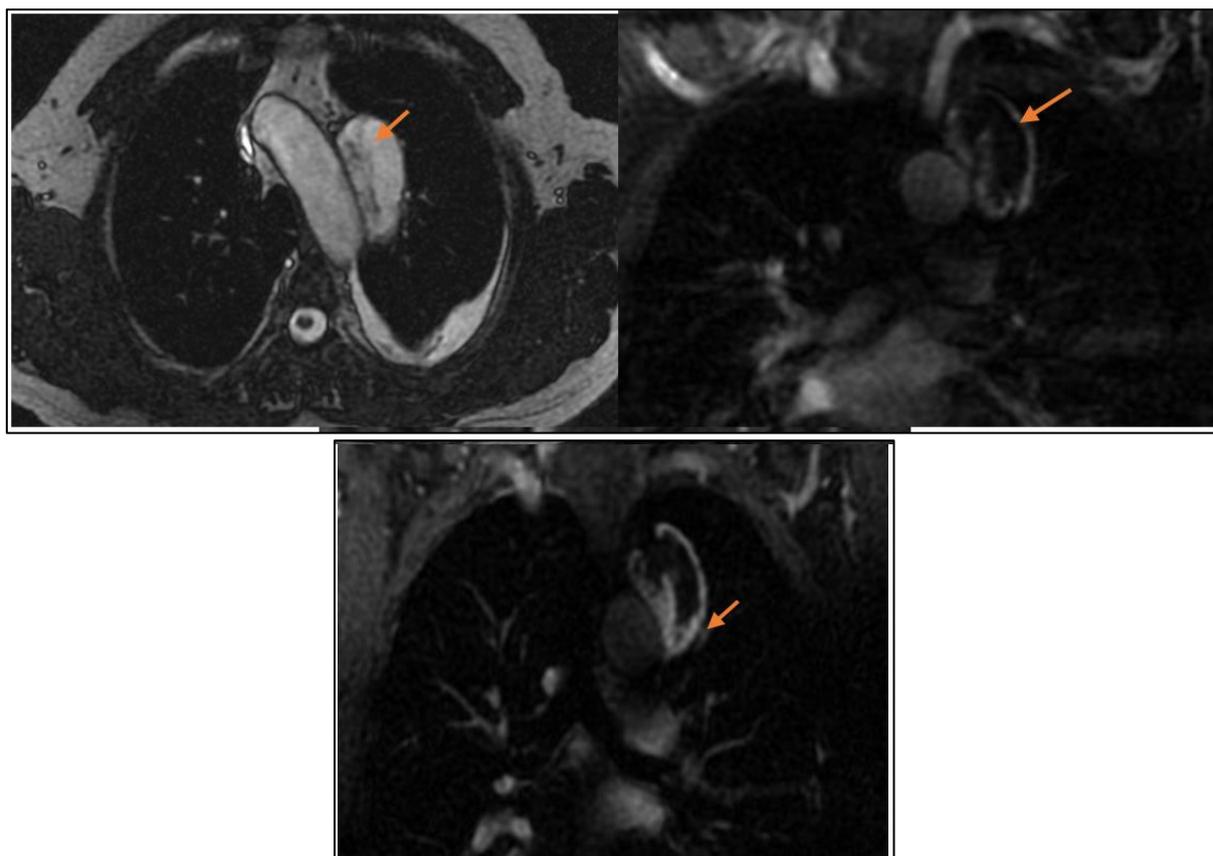


Figure 4: A high signal T2 mass, rapidly enhancing in the post contrast scan, showing the same enhancement pattern found on the CT scan (Yellow arrow)

Included among the diagnostic hypotheses were thymoma and thymic carcinoma. The intense and vivid enhancement of the lesion was against thymoma and the frank T2 hypersignal of the lesion was against thymic carcinoma.

A vascular benign tumor was considered based on its enhancing pattern and the frank hyper T2 signal. The presumptive diagnosis of a hemangioma was made.

Biopsy was not warranted due to high risk of major bleeding.

The patient underwent surgery, revealing a well-circumscribed and hyper vascular tumor.

The diagnostic of capillary hemangioma was confirmed by pathology.

DISCUSSION

Mediastinal masses are divided into anterior, middle and posterior according to their location and can include both benign and malignant neoplasms.

Hyper-vascular mediastinal masses englobe several entities such as Castleman disease, paraganglioma, vascular malformation, ectopic parathyroid adenoma and hyper-vascular metastasis [4].

Mediastinal hemangiomas are very rare benign vascular tumors and occur more frequently in the anterior mediastinum followed by posterior compartment [5, 6].

We distinguish three types of hemangiomas: cavernous, capillary and venous types according to the size of their vascular spaces [1].

Most of these reported mediastinal hemangiomas have been in anterior part but of cavernous type [7].

Capillary hemangiomas are characterized by a lobular, solid growth pattern featuring dilated small vessels and a solid proliferation of endothelial cells [1]. Cavernous hemangiomas are characterized by large, dilated vascular spaces interposed with various stromal elements such as fat, myxoid fibroblastic proliferation, and fibrous tissue [1]. Organized thrombi in hemangiomas are frequent and may calcify as phleboliths that are a potentially diagnostic feature on radiograph or CT images [6].

In a review of literatures, there are a few articles mentioning mediastinal hemangioma and this is to our knowledge the first case of anterior mediastinal capillary hemangioma depicted on imaging.

Cheung *et al.*, reported that mediastinal hemangioma showed heterogeneous enhancement on early images with persistently and gradually increasing enhancement on delayed images [8].

In our case, the hemangioma showed a typical feature of early peripheral nodular enhancement and progressively centripetal fill-in.

On magnetic resonance (MR) imaging, hemangiomas appear homogeneous or heterogeneous, and are hypointense on T1-weighted images and hyperintense on T2-weighted images [9, 10].

In our case, our diagnostic was based on the dynamic enhancement pattern the mass showed and was confirmed by surgical resection and pathology analysis.

CONCLUSION

In conclusion, hemangiomas are uncommon benign tumors of the mediastinum. Dynamic CT study is helpful to make a precise diagnosis of hemangioma when the mass shows characteristic features of peripheral nodular enhancement and progressively centripetal fill-in.

This is to our knowledge the first case of mediastinal capillary hemangioma depicted on imaging.

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