Multidetector computed tomography evaluation of cavernous haemangioma of the azygous vein

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Abstract

Giant cavernous haemangioma of azygous arch is extremely rare. We present the multidetector computed tomography (MDCT) features of a mediastinal cavernous haemangioma in an asymptomatic child detected in a follow-up examination. MDCT features with multiple venous lakes filling from the periphery, focal specks of calcification, low-density soft tissue mass along with tortuous varicose veins and large feeding veins from the abdomen are suggestive of cavernous haemangioma.

Keywords: Cavernous haemangioma • Azygous arch • Multidetector computed tomography

INTRODUCTION

Azygous vein cavernous haemangioma is a rare anomaly. To date, only one case of azygous vein cavernous haemangioma has been reported in the literature [1–3]. The various causes of a dilated azygous vein include portal vein hypertension, obstruction of the superior vena cava, increased pressure in the right-heart chamber, Budd-Chiari syndrome, hypervascular tumour draining into the azygous system, idiopathic and post-traumatic pseudoaneurysms. This case describes the MDCT features of a mediastinal azygous vein cavernous haemangioma and discusses the role of various imaging techniques used earlier.

CASE REPORT

A 7-year-old asymptomatic boy presented for a follow-up assessment of the last surgery done in the first week of the neonatal period. His physical examination was normal, and results from the haematological examinations were within the normal range. Chest radiograph showed widened mediastinum with a possible mass. Enhanced MDCT examination revealed a gradually enhancing giant middle mediastinal vascular mass extending from the carina to the diaphragm in the pathway of the azygous vein. The azygous vein was markedly dilated, tortuous with multiple anomalous venous channels adjacent to it (Fig. 1A–C). The large vascular mass measured 7 × 8 cm, with multiple venous lakes filling from the periphery, focal specks of calcification, low-density (8–10 hounsfield unit) soft tissue mass and tortuous varicose veins along with a large feeding vein from the splenic vein. The current imaging findings were suggestive of a cavernous haemangioma of the azygous vein. The superior vena cava, neck veins, neck arteries and pulmonary veins were dilated. Echocardiography was normal, and computed tomography (CT) of the head did not reveal any vascular anomaly. His past surgical history revealed the presence of a middle mediastinal cystic mass with brownish fluid which was removed partially. The histological examination was in favour of cavernous haemangioma. It showed fine septa with thin-walled cystic vascular spaces and multiple sinusoidal-type blood vessels with fibrous and smooth muscle wall. As the patient was asymptomatic, no further surgical intervention was carried out and he was discharged with follow-up.

DISCUSSION

Cavernous haemangioma is a type of venous malformation, and the identification of cavernous haemangioma of the azygous vein is usually an incidental finding obtained for another purpose. Invariably, these patients are asymptomatic, and a timely diagnosis may not be possible. As the blood flow in a haemangioma is slow, CT may be useful for the evaluation of venous lakes, collaterals, calcification and delayed contrast enhancement. Magnetic resonance imaging (MRI) has better tissue characterization without any ionizing radiation. Phleboliths are better appreciated with MDCT and may appear as signal-void foci with all sequences of MRI, and thrombi appear as foci without enhancement after gadolinium-based contrast material administration [4]. Although transthoracic echocardiography and tracheobronchial ultrasonography were used for the diagnosis of mediastinal azygous haemangioma in two previous cases,
it is somewhat invasive and associated with some degree of morbidity [5]. On the other hand, CT or MR are non-invasive with the potential of global visualization of the distant feeding vessels for better preoperative planning of the lesions [3]. Zhang et al. [3] reported the use of CT for the identification of mediastinal haemangioma. In addition to the histological examination in the present case which favours cavernous haemangioma, the CT features further substantiate the diagnosis of cavernous haemangioma with a large mass with multiple venous lakes, phleboliths, complex multiple venous channels, distant feeding vein and delayed enhancement. The familiarities of the two-dimensional as well as the three-dimensional CT imaging features are not only helpful to the radiologists, but also to the surgeons in particular, particularly for future surgical planning [4]. Azygous vein haemangioma may develop and may be potentially malignant; hence, a follow-up of similar lesion is essential for future management [1].

**Conflict of interest:** none declared.

**REFERENCES**


