Mediastinal Hemangioma in a One Year Old Infant

A Case Report

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ABSTRACT

Benign vascular tumours are rarely encountered in the mediastinum, but most common of these tumours are mediastinal hemangiomas which account for approximately 0.5% of all mediastinal tumours.

In the thoracic department of Medical City Teaching Complex in Baghdad, in April 2009, a one-year-old baby presented with shortness of breath with chest radiograph reveals an opacity occupying the entire left hemi thorax. Exudative hemorrhagic pleural fluid was aspirated and then left thoracostomy tube was inserted to evacuate pleural cavity, but subsequent chest x-rays were unchanged and CT scan of the chest reported a presence of huge left sided multiloculated pleural effusion. Left thoracotomy had been done and a huge mediastinal hemangioma was found compressing the left lung downward posteriorly and adhere to the pericardium, ascending aorta, the arch of aorta and left hilum, extending to the right hemi thorax. Removal of the whole mass was done successfully and the histological examination was consistent with cavernous hemangioma.

Keywords: Hemangioma, Mediastinal hemangioma, Mediastinal mass.

Iraqi Medical Journal Vol. 63, No. 1, January 2017; p.105-108.

Benign vascular tumours are rarely encountered in the mediastinum, but most common of these tumours are mediastinal hemangiomas which account for approximately 0.5% of all mediastinal tumours and they most commonly occur in the anterior mediastinum, with a few arising in the posterior mediastinum[1-3].

Hemangiomas in the chest occur primarily in children and only 25% have been reported after age 35 years, with a peak incidence in the first decade supporting the theory that they are usually developmental malformations rather than true neoplasms[3,4].

Most patients are asymptomatic at presentation and diagnoses are made incidentally with imaging. Patients may present with nonspecific symptoms including cough, chest pain, dyspnoea, stridor, and hoarseness due to the mass effect of the tumour on adjacent organs[5].

Radiographically, mediastinal hemangiomas usually present as nonspecific masses. Phleboliths are seen on conventional radiographs in approximately 10% of these tumours and considered as diagnostic feature[6].

On CT, mediastinal hemangiomas are of a well circumscribed mass with heterogenous attenuation, more commonly in the anterior mediastinum and are round or lobulated with smooth margins and sometimes with punctate calcification[3,4]. Mediastinal hemangiomas usually enhanced heterogeneously and may show marked increased central enhancement after the administration of IV contrast material[3].

Total resection has been considered curative and there appears to be no role for chemotherapy or radiation in management[4].

Histologically, they are classified into cavernous, capillary, and venous types based on the size of their vascular spaces[5] and malignant degeneration does not occur in mediastinal hemangioma[7].

Case Report

In the thoracic department of Baghdad Medical City Teaching Complex in April 2009, a one-year-male old baby presented with shortness of breath and increasing

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dyspnoea without history of fever, chills or coughs over few months. His parents gave a history of pleural fluid aspiration six months ago with normal cytological and biochemical results.

Chest radiograph reveals an opacity occupying the entire left hemi thorax with shifted mediastinum, (Figure 1), while the report of the ultrasound of the chest concluded that there was a huge pleural effusion with underlying mass. CT scan of the chest reported that a huge left-sided multiloculated pleural effusion compressing the left lung without presence of phleboliths, (Figure 2).

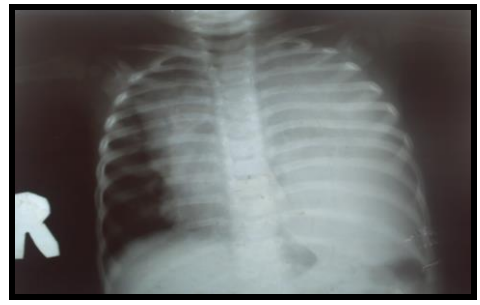

Figure 1: Posteroanterior chest radiograph show complete opacity of left hemithorax with shifted mediastinum.

Figure 2: CT scan show a homogenous mass extending to anterior mediastinum with total collapse of left lung without presence of phleboliths.

Exudative hemorrhagic pleural fluid was aspirated and it was cytologically negative for malignant cells and culture – negative for routine bacteria and acid fast organisms.

Left thoracostomy tube was inserted to evacuate pleural cavity, but little amount of pleural fluid was drained and subsequent chest x-ray was unchanged. Therefore, left postrolateral thoracotomy was done and a huge uncapsulated well-circumscribed lobulated multicystic mass with fluid content was found with residual pleural fluid compressing the left lung downward posteriorly and adhere to the pericardium, ascending aorta, the arch of aorta and left hilum, extending to the right hemithorax without gross invasion of the mediastinal structures. Blunt and sharp dissection for removal of the whole mass was done successfully with ligation of the venous pedicle that connected to the innominate vein.

The histological examination was consistent with cavernous hemangioma.

The patient had uneventful postoperative period, (Figure 3) and discharged on 5th postoperative day.

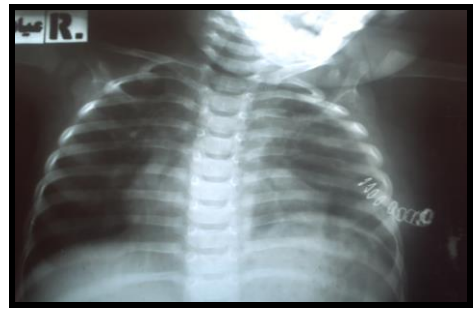

Figure 3: Postoperative chest radiograph showing normal looking x-ray.

Discussion

Hemangiomas are common elsewhere in the body but rare in the mediastinum which comprise only 2-3% of all hemangiomas in the children and they account for approximately 0.5% of all mediastinal tumours[3,8].

Most of the patients are asymptomatic or have non specific symptoms[1,5,6,8] and our patient had a persistent shortness of breath due to an unusual huge mediastinal cavernous hemangioma occupying the whole left hemithorax with complete collapse of the left lung making his presentation early during the first year of life.

There was a difficulty in the diagnosis because of the chest radiograph of the patient showed diffuse opacity occupying the whole left hemithorax without any calcifications or phleboliths (Phleboliths are radiologically characteristic of hemangioma, but they are only visible in 10% of all cases) and the chest CT was not conclusive of mediastinal hemangioma mimicking pleural effusion[6,8]. In addition to the thoracocentesis, thoracostomy tube was inserted as a case of pleural effusion. Since, mediastinal hemangiomas have not been reported with associated pleural effusion[4,8], it should not be misdiagnosed as a case of pleural effusion, even if a CT scan report suggesting presence of fluid in the pleural cavity or absence of phleboliths. Moreover, since a medisatinal mass is most likely benign in the 1st decade of life (in contrast to the 2nd through 4th decade have greater proportion of malignant masses e.g. lymphoma and germ cell tumours)[6,9], it should be treated as mediastinal mass rather than a case of pleural effusion in order to get a precise histologic diagnosis and proper management. The limited tissue obtained from needle biopsy prevented a clear categorization into histologic subset and since resection appears to be curative in most cases, attempts to make a diagnosis preoperatively may be challenged[6,10,11]. Therefore, surgery rather than percutaneous biopsy is recommended for diagnosis and treatment.

The histopathological examination of the excised mass was consistent with cavernous hemangioma and it was unencapsulated in contrary to the most tumours which are encapsulated[8,12] and that may explain the occupying of whole left hemithorax with complete left lung collapse and early presentation.

In conclusion, cavernous haemangiomas are rare benign vascular tumour of the mediastinum and should be considered as an important differential diagnosis of mediastinal masses. The preoperative diagnosis of this lesion is often difficult. Surgical resection is the treatment of choice.

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IMJ 2017;63(1):105-108.