

Cervicomedial Lipoma

Mikio OKA^{1, 2)}, Kiyoto HIROSE^{1, 2)}, Tetsuo TANIGUCHI²⁾
Akitoshi KINOSHITA²⁾, Hiroshi SODA²⁾ and Kohei HARA²⁾

- 1) Department of Internal Medicine, Kochi Prefectural Seinan Hospital, Nakamura, Kochi, Japan.
- 2) The Second Department of Internal Medicine, Nagasaki University School of Medicine, Nagasaki, Japan.

Received for publication, November 7, 1990

ABSTRACT: A 67-year-old female was hospitalized with complaints of cough and shortness of breath. A chest roentgenogram showed a right upper mediastinal mass. Computed tomography demonstrated a well circumscribed large mass, with a fat density, extending from the azygos arch to the thyroid cartilage. The mass displaced the superior vena cava anteriorly and trachea laterally to the left. It was hourglass shaped, 250g in weight and could be easily removed completely along with the thoracic portion from the cervix. The histologic findings were consistent with lipoma. Its CT diagnosis was discussed.

INTRODUCTION

Lipomas are the most common benign tumors, particularly of the skin. However, mediastinal lipomas are rare benign tumors^{1, 2)}, with cervicomedial type lipomas being even more so³⁾. We report a case of a large cervicomedial type lipoma. The role of computed tomography in the diagnosis of mediastinal fatty tumors is discussed.

CASE REPORT

A 67-year-old female nonsmoker was hospitalized in June 1988 for further evaluation of a right mediastinal mass shadow. She sometimes had a hacking cough followed by shortness of breath and exertion since January 1988, when, for instance, walking up a slope or walking for several minutes. She had been treated at a hospital for bronchial asthma, but the symptoms did not subside. The chest

roentgenogram for mass screening of lung cancer in May 1988 showed a mediastinal mass shadow. On admission, dyspnea deteriorated in the supine position. An accentuated tracheal sound over the middle upper field anteriorly was audible on auscultation. No lymphadenopathy, venous enlargement of the neck or struma were detected. The peripheral blood analysis, blood chemistries, and serological tests were all within normal limits. No pulmonary function test could be satisfactorily conducted due to dyspnea. The chest roentgenogram showed a well circumscribed large mass of homogenous density in the right upper mediastinum (**Fig. 1**), extending to the level of the right hilum inferiorly and slightly displacing the trachea to the left. Computed tomography (CT) demonstrated a well circumscribed large mass extending from the right hilum to the neck along the trachea. At the level of the aortic arch (**Fig. 2A**), the mass displaced the superior vena cava anteriorly and the trachea laterally to the left. The tracheal lumen showed an abnormal



Fig. 1. Chest roentgenogram showed a well circumscribed mediastinal mass of homogeneous density, extending from the right hilum to the thoracic inlet.

configuration, and its size had been reduced by about one-third by the mass. The mass was almost of homogeneous density, with CT numbers ranging from -65 to -95 Hounsfield units (HU), indicating a fat density. It appeared to contain several septae of fibrous texture. At the level of the sternal notch (**Fig. 2B**), it was situated between the right clavicle and spine, displacing the trachea and adjacent vessels. Its CT density was slightly heterogeneous. The CT diagnosis was a mediastinal lipoma extending from the azygos arch to the thyroid cartilage.

The right side of the lower neck was explored to establish a tissue diagnosis. Histologic findings of the biopsy specimen from the cervical portion of the mass revealed mature adipose tissue consistent with lipoma, with fibrous tissue and small vessels. At operation, on June 27, 1988, a right thoracotomy was performed through the bed of the fifth rib. The mass, yellow and soft, extended from the azygos arch to the neck below the subclavian artery, without adhering to surrounding tissue. A transverse incision was made in the lower portion of the right sternomastoid muscle. The mass was situated between the thyroid and right carotid artery displaced laterally. It was pulled up to the cervical portion and easily removed

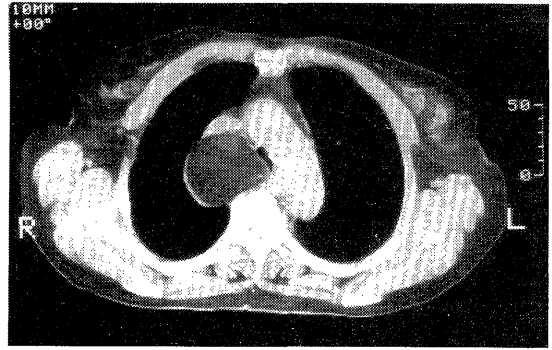


Fig. 2A. Computed tomography at the level of the aortic arch. The mass displaces the superior vena cava anteriorly and the trachea laterally to the left. The tracheal lumen is reduced by about one-third. Its CT numbers range from -65 to -95 Hounsfield units.

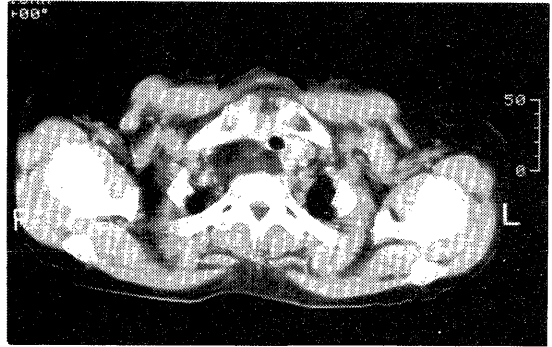


Fig. 2B. Computed tomography at the level of the sternal notch. The mass is situated between the right clavicle and spine, displacing the trachea and adjacent vessels to the left. The mass density is slightly heterogeneous.

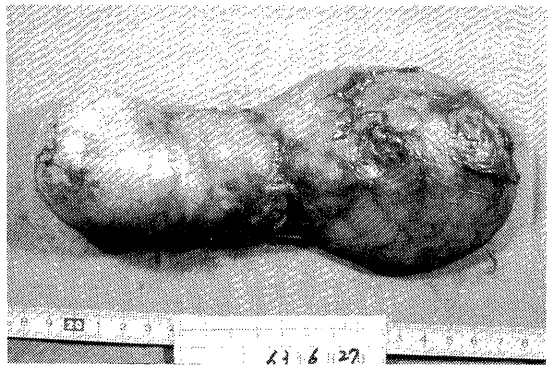


Fig. 3. The removed mass. A thin fibrous tissue encapsulated the mass. Left side in the figure is cervical portion, and right side thoracic portion.

completely along with its thoracic portion. It was hourglass shaped, elastic soft with a thin fibrous capsule, and 250g in weight (Fig. 3). The histologic findings were the same as those of the biopsy specimen, and consistent with lipoma. After the operation, respiratory symptoms such as cough and dyspnea subsided completely.

DISCUSSION

Mediastinal lipomas are rare benign tumors, and have been found to be only one to two per cent of primary mediastinal tumors^{1,2}. They are predominantly found in the anterior mediastinum^{4,5}. Keeley and Vana classified mediastinal lipomas into two main groups according to their extent - wholly intrathoracic lipomas or hourglass thoracic lipomas with intrathoracic and extrathoracic portions³. Furthermore, hourglass lipomas were divided into cervicomedial and transmural types. In their report, most mediastinal lipomas are intrathoracic, and the hourglass type is less common³. The present case is the cervicomedial type, and the particularly rare hourglass type.

Most mediastinal lipomas are discovered by a routine chest roentgenogram³. Mediastinal lipomas are usually asymptomatic for a long time until the tumors become large and compress adjacent structures, such as the trachea and esophagus^{3,6}. Symptoms reported in literature are exertional dyspnea, dysphagia, weakness, fatigue, a sense of oppression, or a feeling of heaviness^{3,6}. In such cases, it is extremely difficult to differentiate lipomas from malignant tumors by conventional roentgenograms. On admission, we suspected a malignant tumor of the mediastinum based on the symptoms and chest roentgenogram.

CT in the diagnosis of mediastinal tumors provides much information such as locations, characteristics and relation to adjacent structures. Particularly in fatty tumors, CT is the best diagnostic non-invasive procedure in that CT numbers of fat tissue generally range from -50 to -150 HU and provide a definitive diagnosis^{4,7,8}. CT diagnosis in some cases avoids unnecessary thoracotomy^{9,10}.

Primary liposarcomas rarely occur in the mediastinum^{10,11}. Pathologically, they vary from well-encapsulated, relatively benign tumors to unencapsulated highly malignant tumors invading adjacent structures rapidly¹¹. Their CT density is heterogeneous, and higher than that of lipomas^{4,10}. No malignant transformation of lipomas has ever been observed¹². For the above reason, it is considered that biopsy in the cervix was unnecessary in the present case.

SUMMARY

A large mediastinal lipoma of cervicomedial type in an adult was reported and the CT diagnosis was discussed.

REFERENCES

- 1) Wychulis AR, Payne WS, Clagett OT, Woolner LB. Surgical treatment of mediastinal tumors - a 40 year experience. *J Thoraci Cardiovasc Surg* 62:379, 1971.
- 2) Staub EW, Barker WL, Langston HT. Intrathoracic fatty tumors. *Chest* 47:308, 1965.
- 3) Keeley JL, Vana AJ. Lipomas of the mediastinum - 1940 to 1955. *Internat Abstr Surg* 103:313, 1956.
- 4) Chalaoul J, Sylvestre J, Dussault RG, Pinsky M, Palayew MJ. Thoracic fatty lesions some usual and unusual appearances. *J Can Assoc Radiol* 32:197, 1981.
- 5) Feigin DS, Padua EM. Mediastinal masses: a system for diagnosis based on computed tomography. *J Comput Tomogr* 10:11, 1986.
- 6) Johansson L, Soderlund S. Intrathoracic lipoma. *Acta Chir Scand* 126:558, 1963.
- 7) Cohen WN, Seidelmann FE, Bryan PJ. Computed tomography of localized adipose deposits presenting as tumor masses. *A J R* 128:1007, 1977.
- 8) Naidich DP, Zerhouni EA, Siegelman SS. *Computed Tomography of the Thorax*. Raven Press, New York, 1984, p. 44.
- 9) Millward S, Escott N, Masood K. The diagnosis of a pleural lipoma by CT and fine-needle biopsy to avoid thoracotomy. *J Can Assoc Radiol* 39:57, 1988.
- 10) Mendez G, Isikoff MB, Isikoff SK, Sinner WN. Fatty tumors of the thorax demonstrated by CT. *Am J Roentgenol* 133:207, 1979.
- 11) Schweitzer DL, Aguam AS. Primary liposarcoma

of the mediastinum - report of a case and review of the literature. *J Thorac Cardiovasc Surg* 74 : 83, 1977.

- 12) Epler GR, McLoud TC, Munn CS, Colby TV. Pleural lipoma - diagnosis by computed tomography. *Chest* 90 : 265, 1986.