

Intra-atrial Manifestation of Invasive Thymoma

- A Case Report -

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〈국문초록〉

심방내 증양으로 발현한 침습성 흉선종 - 1예 보고 -

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흉선종은 심혈관을 침범하여 상대정맥 증후군을 유발시킬 수 있는 드문 질환이다. 저자들은 대정맥조영술상 우심방내에 분엽상의 종괴를 보이고 상대정맥을 폐쇄시켜 원발성 심장증양 처럼 발현된 흉선종을 경험하였기에 문헌고찰과 함께 보고하는 바이다. CT스캔상 종괴의 대부분은 심혈관내에 위치하고 있었으며 그 일부는 전종격동에 위치하고 있음을 확인할 수 있었다.

which was demonstrated by CT and angiography.

Introduction

Invasive thymoma may invade cardiovascular structures and also can compress the heart and superior vena cava(SVC)¹⁻⁸⁾. But intracardiac manifestation of major portion of the tumor is quite unusual raising difficulties in differentiation between mediastinal tumor extending to the heart and cardiac tumor extending to the mediastinum. To the best of our knowledge, there has been no report of invasive thymoma primarily manifesting as an intra-atrial mass causing SVC syndrome

Case Report

A 48-year-old woman was admitted complaining of dependent edema in the lower and upper extremities for several years which has been aggravated since one year prior to admission. Physical examination revealed puffy face and pitting edema on the lower extremities. The chest radiograph showed mild to moderate cardiomegaly with prominent aorta and a right pleural effusion.

Computed tomography showed a right pleural effusion and an anterior mediastinal mass and another large mass which occupied the right atrium and the SVC(Fig. 1-a, b). Upper extremity venography showed complete obstruction of the

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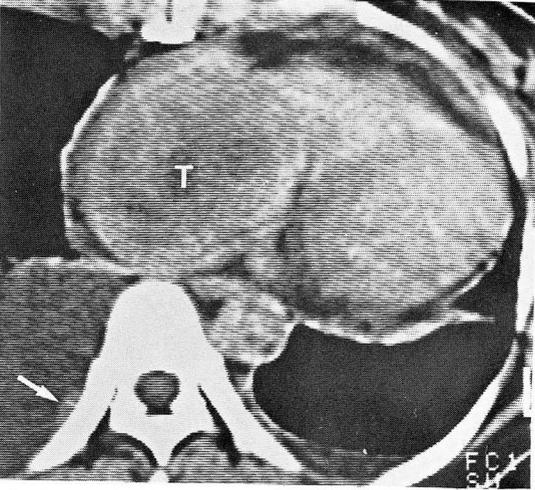
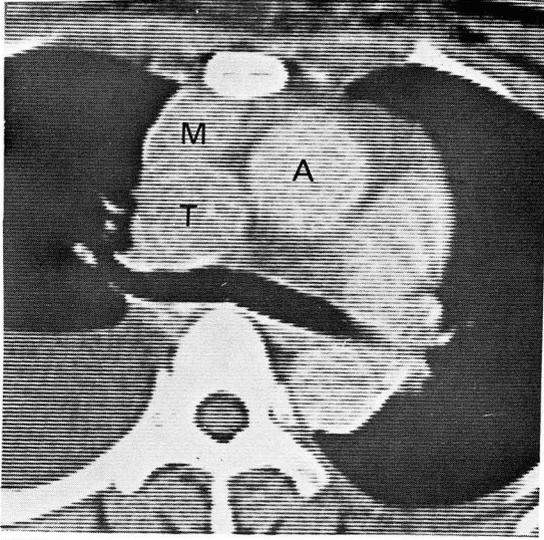


Fig. 1. a: CT scan at the level of carina. Contiguous anterior mediastinal (M) and intracaval tumor mass (T) is seen. Right pleural effusion. A=Ascending aorta.
b: Lower section demonstrates tumor mass(T) within the dilated right atrium. Note pleural extension of the mass(white arrow).

left innominate vein and nearly complete occlusion of the SVC(Fig. 2-a).

Inferior vena cavogram revealed a large intra-atrial mass(Fig. 2-b).

At surgery, a 6X3X2 cm sized hard mass was found in the anterior mediastinum which was connected with a mass occupying the SVC and right

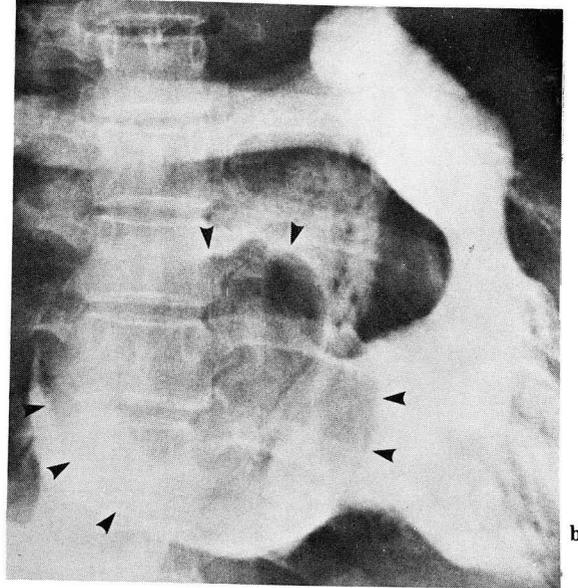
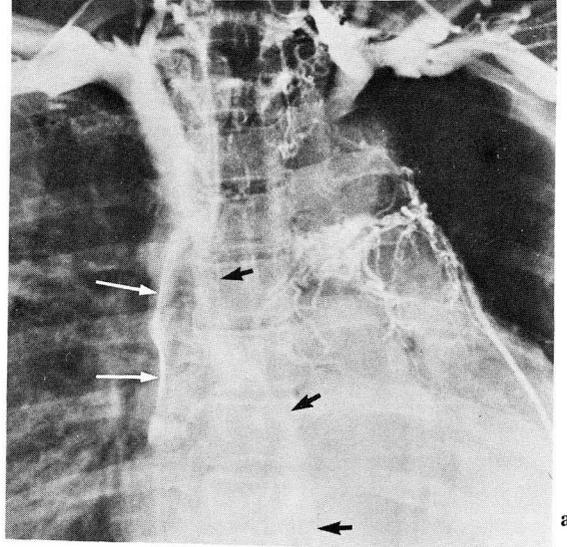


Fig. 2. Venacavogram
a: Both upper arm venography shows nearly complete occlusion of the SVC with collateral drainage via the azygos and hemiazygos vein(black arrows). A thin layer of contrast media is noted between the tumor mass and right atrial wall(white arrows).
b: Inferior vena cavography. Large, lobulated filling defect in the right atrium(arrowheads).

atrium through the extrapericardial portion of the SVC. Histologically, the resected anterior mediastinal tumor was a thymoma of mixed type.

Discussion

The growth behavior and extent of the tumor is known to be the most important prognostic factor in a patient with thymoma. Thymoma has malignant potential which is presented by local invasion, infiltration to adjacent thoracic organs by direct extension, discontinuous pleural seeding, transdiaphragmatic extrathoracic extension and even distant metastasis in rare cases. Zerhouni et al¹⁾ documented the ability of CT to provide the information essential for accurate staging and treatment planning.

Metastatic pathways taken by tumors reaching the heart are usually listed as the blood stream, lymphatics, and direct extension, the last being unusual since the pericardium is a strong barrier^{5,6)}. Invasion to the SVC and intraluminal extension of the tumor to the right atrium is thought to be the mechanism of spread in our case and it may occur in lung cancer and other malignancies⁵⁻⁷⁾. Our case is also of interest in that secondary involvement of the heart mimicked a primary cardiac tumor⁸⁾.

Even though CT does not currently play a major role in the diagnosis of intracardiac tumors, conventional CT scanners can also demonstrate mass within the cardiac chambers.

Reports of echocardiographic features of cardio-

vascular involvement by invasive thymoma^{3,4)} suggest echocardiography as an initial diagnostic modality when the diagnosis of cardiac tumor is considered. However, in cases of mediastinal tumor invading to cardiovascular structure, CT has advantage over echocardiography as it shows the extracardiac portion of the mass.

REFERENCES

1. Zerhouni EA, Scott WW, Jr., Baker RR, Wharam MD, Siegelman SS: *Invasive thymomas; Diagnosis and evaluation by computed tomography. J Comput Assist Tomogr* 6(1):92-100, 1982
2. Shin MS, Witten DM, Han SY, Perrott WW: *Cardiovascular involvement by invasive thymomas. J Surg Oncol* 9:189-202, 1977
3. Nishimura T, Kondo M, Miyazaki S, Mochizuki T, Umadome H, and Shimono Y: *Two-dimensional echocardiographic findings of cardiovascular involvement by invasive thymoma.*
4. Canedo MI, Otken L, Stefadouros MA: *Echocardiographic features of cardiac compression by a thymoma simulating cardiac tamponade and obstruction of the SVC. British Heart Journal* 39:1038-1042, 1977
5. Hanfling SM: *Clinical process; Metastatic cancer to the heart. Review of the literature and report of 127 cases. Circulation* 22:474-483, 1960
6. Young JM, Goldman IR, F.C.C.R.: *Tumor metastasis to the heart. Circulation* 9:220-229, 1954
7. Lochridge SK, Knibbe WP, Doty DB: *Obstruction of the superior vena cava. Surgery* 85:14-24, 1979
8. Laws JW, Annes GP, Bogren HD: *Primary malignant tumors of the heart. Calif Med* 118:11-17, 1973