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Thymofibrolipoma
– A Brief Case Report –

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Thymofibrolipoma is an extremely rare tumor in the anterior mediastinum, and represents a histologic variant of the usual thymolipoma. Herein, we report a case of thymofibrolipoma in a 9-year-old girl who had a huge mass with fatty attenuation in the right hemithorax on chest computed tomography. She denied any subjective symptoms except mild fever. The surgically resected tumor was ovoid, soft and well-encapsulated, measuring 9.0 × 7.5 × 7.0 cm. The cut surface was light tan in color with yellowish streaks. Microscopically, two distinct areas were admixed in different proportions. One consisted of normal thymic tissue with subinvoluted features and the other was composed of extensive areas of collagenous tissue interspersed in mature adipose tissue. In a high power view, there were thin strands of remnant thymic epithelial cells, separating the pseudolobules. Thymofibrolipoma should be distinguished from other benign or malignant conditions, occurring in the anterior mediastinum, so that unnecessary treatment can be avoided.

Key Words : Mediastinal neoplasms; Thymofibrolipoma

Thymolipoma, a rare benign tumor distinct from simple lipoma of the mediastinum, was first described by Lange[1] in 1916. The tumor is composed of histologically normal thymic tissue and mature adipose tissue. Cases of aplastic anemia,[2] Graves' disease[3] and myasthenia gravis[4] have been reported in association with thymolipoma. Radiographically, it may simulate cardiomegaly or other thymic neoplasms. Rare examples demonstrated extensive areas of collagenous tissue with islands of mature adipose tissue. We herein report a case of thymofibrolipoma, a histologic variant of the usual thymolipoma, which should be distinguished from other begin or malignant tumors of the anterior mediastium.

CASE REPORT

A 9-year-old girl with a history of upper respiratory infection was found to have a right hemithorax mass on a chest X-ray. Thoracic computed tomography revealed fatty attenuation in the mass (Fig. 1). The child had no subjective symptom and no abnormality was noted on neurologic and physical examination. The results of routine laboratory studies were within normal ranges except for mild leukocytosis in the peripheral blood. Surgical resection of the mass was performed.

The tumor was oval in shape and well-encapsulated, measuring 9.0 × 7.5 × 7.0 cm. The cut surface was soft and light-tan with yellowish streaks (Fig. 2A). There was no focus of necrosis or hemorrhage. Histologically, two distinct areas were admixed in different proportions. One is consisted of normal thymic tissue with subinvoluted features. Hassall's corpuscles revealed cystic dilatation with accumulation of cellular debris and dystrophic calcification. The perivascular spaces were prominent and easily identified. Lymphocytes predominated in some areas and small epithelial cell clusters were seen at the periphery. The other contained areas of collagenous tissue interspersed with mature adipose tissue (Fig. 2B, C). Strands of epithelial cells admixed with small lymphocytes were embedded in the fibroadipose stroma (Fig. 2D). A rim of uninvolved normal thymus exhibiting lobular architecture was found in the periphery of the tumor. A ger-

minal center was not evident in the normal thymic tissue. Mitosis or cellular atypia was not observed in any of the sections. There was no evidence of recurrence after surgical resection.

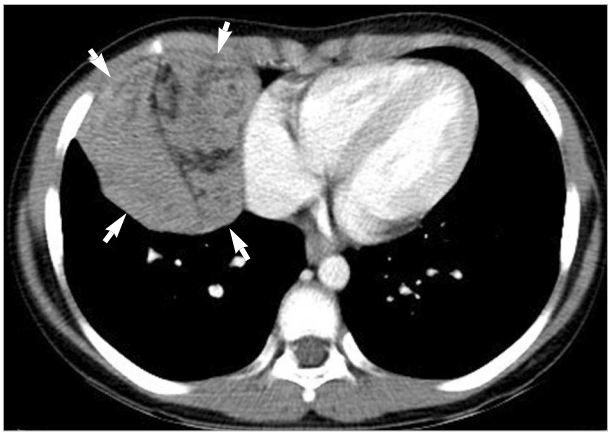

Fig. 1. Chest computed tomography shows a well-demarcated huge ovoid soft tissue mass (arrows) with fatty attenuation.

DISCUSSION

Thymolipoma is an unusual benign tumor that may occur at any age, but the mean age of diagnosis is 33 years. There is no sex predilection. In the majority of cases, the tumors are found incidentally on routine chest X-rays, but approximately 10% are associated with paraneoplastic syndromes or present with dyspnea and cough. They are curable with simple excision, even in patients who have tumor-related paraneoplastic syndromes.[5]

Histologically, thymolipoma displays extensive areas of mature adipose tissue, admixed with thymic tissue in different proportions, and is bounded by a thin fibrous capsule. Rare examples demonstrated extensive areas of collagenous tissue with islands of mature adipose tissue, which was first named thymofibrolipoma

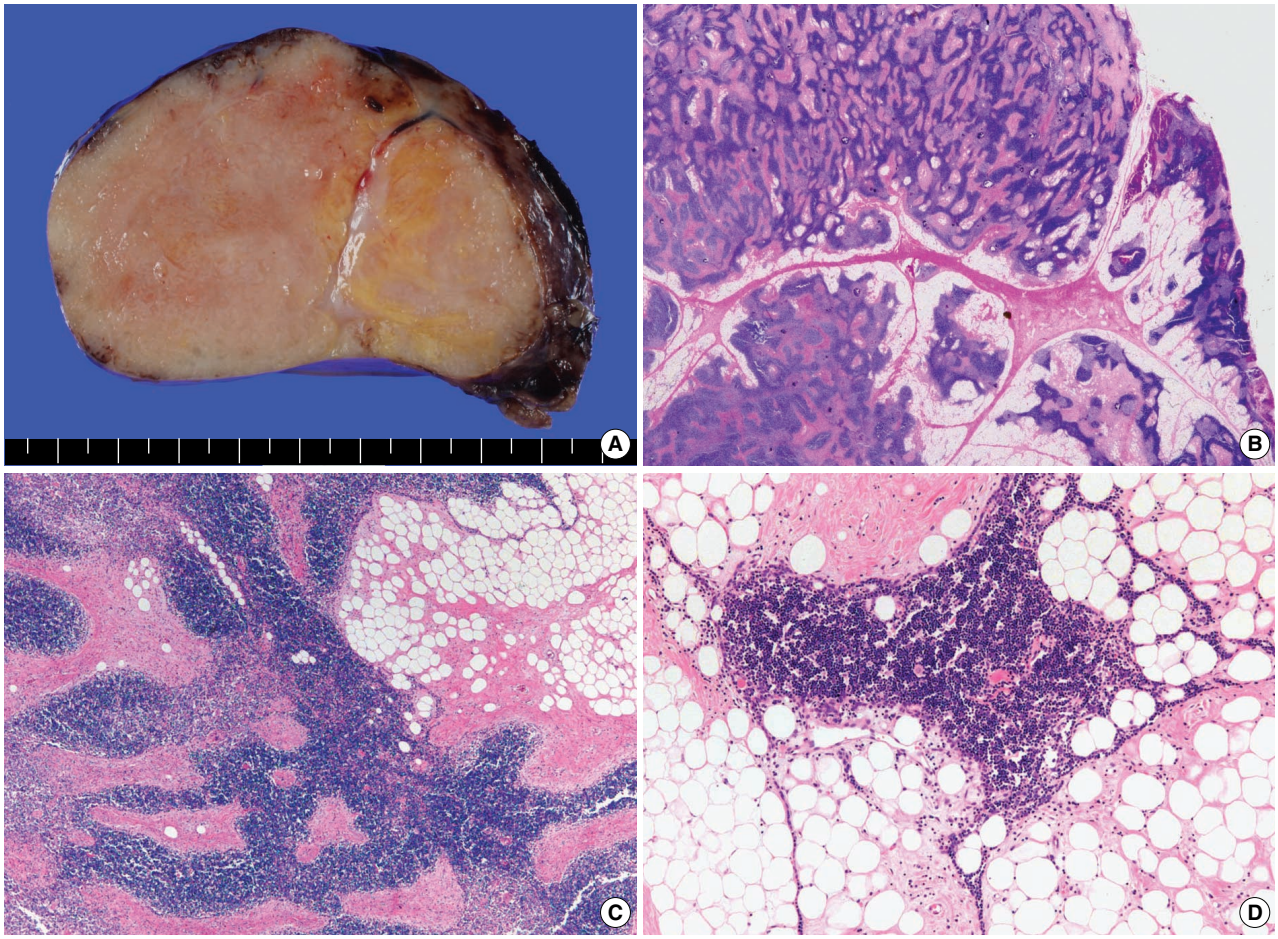

Fig. 2. The tumor is oval in shape and well-encapsulated, measuring 9.0 × 7.5 × 7.0 cm. The cut surface is soft and light-tan with yellowish streaks (A). The tumor is composed of abundant collagen tissue among the thymic components and mature adipose tissue (B, C). The thymic epithelial cells are scattered in the area of small lymphoid cell aggregate (D).

in recognition of the peculiar morphologic variation by Moran *et al*.[6] The patients, a 9-year-old girl and a 32-year-old man, were found to have an anterior mediastinal mass on routine chest X-ray, followed by surgical resection. Our case was consistent with a previous report, showing abundant collagenous tissue interspersed with mature adipose tissue. Even though the histologic features were distinct, adequate biopsy sampling was required to evaluate atypical areas and to identify other tissue components. The feature that may be prominent in anterior mediastinal liposarcoma is the presence of hyperplastic lymphoid follicles with reactive germinal centers, which should not be mistaken for residual thymic parenchyma. Havlícek and Rosai[7] reported mediastinal tumors, that had the overall gross appearance of thymolipoma, but differed from the adipose tissue of thymolipoma in that obvious nuclear atypia and hypercellularity were evident.

It is still controversial whether this is a neoplasm, hamartoma, or regressive change in a hyperplastic thymus. However, the hyperplastic process would involve the entire gland without the presence of normal thymus in the periphery. The haphazard admixture of two different normal components of the thymus, one of which grows at a faster pace than the other, would be more in keeping with the harmartomatous process.[5]

In summary, thymofibrolipoma, a histologic variant of thymolipoma, is an unusual but distinct lesion, which should be considered in the differential diagnoses of benign or malignant neoplasms occurring in the anterior mediastinum.

REFERENCES

1. Lange I. Uber ein lipom des thymus. Zentralbl Allg Pathol 1916; 27: 91-101.
2. Barnes RD, O'Gorman P. Two cases of aplastic anaemia associated with tumours of the thymus. J Clin Pathol 1962; 15: 264-8.
3. Benton C, Gerard P. Thymolipoma in a patient with Graves' disease: case report and review of the literature. J Thorac Cardiovasc Surg 1966; 51: 428-33.
4. Ríos Zambudio A, Torres Lanzas J, Roca Calvo MJ, Martínez Barba E, Parrilla Paricio P. Thymolipomas in association with myasthenia gravis. J Thorac Cardiovasc Surg 2001; 122: 825-6.
5. Moran CA, Rosado-de-Christenson M, Suster S. Thymolipoma: clinicopathologic review of 33 cases. Mod Pathol 1995; 8: 741-4.
6. Moran CA, Zeren H, Koss MN. Thymofibrolipoma: a histologic variant of thymolipoma. Arch Pathol Lab Med 1994; 118: 281-2.
7. Havlícek F, Rosai J. A sarcoma of thymic stroma with features of liposarcoma. Am J Clin Pathol 1984; 82: 217-24.