ECTOPIC MIDDLE MEDIASTINAL THYMOMA
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Abstract: Thymoma located in the middle mediastinum is extremely rare. We report a case of middle mediastinal thymoma in a 32 year old man with myasthenia gravis. Chest X-ray, CT, MRI were performed preoperatively. The tumour was removed by video-assisted thoracic surgery, and the pathological diagnosis was type B1 thymoma of the World Health Classification and stage 1 thymoma of Masaoka clinical staging system.

Keyword: Ectopic Thymoma, Middle Mediastinum, Myasthenia Gravis, CT, MRI.

INTRODUCTION
Thymoma are the most common neoplasm of anterior mediastinum. However they also arise in ectopic locations including neck, middle or posterior mediastinum, skull base, lung, and pleural cavity. Ectopic middle mediastinal thymoma is extremely rare with only 10 cases reported in literature. Out of these 10 case reports only one patient had myasthenia symptoms.

CASE REPORT
A 32 year old man with complaints of general weakness on lifting weights, not able to chew or speak continuously for the six months diagnosed to have myasthenia gravis in private clinic came to our hospital for further evaluation. No abnormalities found in blood test except for serum acetylcholine receptor antibody was found to be elevated (106.0nmol./L). These findings suggested a diagnosis of myasthenia gravis. Chest X-ray revealed protruding mass on the left side of the mediastinum (Fig.1). Unenhanced chest CT revealed a solitary lobulated tumour of homogenous soft tissue attenuation (HU of 35 to 40) measuring 2.7x2.7cm in middle mediastinum protruding on the left side below the level of pulmonary artery (Fig.2). The lesion contains no calcification or fat attenuation within it. Contrast enhanced CT showed mild homogenous enhancement of the lesion. (Fig.3a-c). Anterosuperior mediastinum shows normal appearing thymus (Fig3-d). Lung window appears clear.

FIG 1 CHEST X-RAY

FIG 2 CT CHEST PLAIN

FIG 3A CECT CHEST

FIG 3B CECT CHEST

FIG 3D CECT CHEST

Chest magnetic resonance (MR) images were also performed (Fig.4a-d). The lesion showed low signal intensity similar to muscle on T1- weighted images and moderate high signal intensity to muscle on T2- weighted images and hyperintensity on STIR images. The lesion showed few tiny foci of high signal intensity on T2- weighted images suggesting cystic formation. CT and MR examination showed no obvious adjacent vessel invasion.

FIG 4A MRI
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FIG 4 B MRI

FIG 4C MRI

FIG 5 HPE

The postoperative course was uneventful. The patient was discharged on postoperative day 10. The patient was doing well with improvement of myasthenia symptoms and without any recurrence of the tumor at 6 months after surgery.

DISCUSSION
Most thymomas are found in the anterior mediastinum because of the proper location of the thymus. Ectopic locations of thymoma are neck, middle and posterior mediastinum, lungs, pleural cavity. Particularly thymoma located in the middle mediastinum is extremely rare with so far ten cases are reported in literature. It is considered to be associated with mismigration of thymic gland tissue during embryogenesis. Approximately 10 to 20% of patients with myasthenia gravis have a thymoma and 30 to 50% of patients with thymoma have myasthenia gravis. Only single case of myasthenia gravis with middle mediastinal thymoma has been reported in the literature. In general, thymoma present as sharply demarcated round or oval soft tissue attenuation mass with mild to moderate contrast enhancement on CT. Rarely cystic areas or calcification seen within the lesion. On MRI thymoma typically appear as round, oval, lobulated mass with low signal intensity similar to muscle on T1-weighted images and high signal intensity on T2-weighted images.

Differential diagnosis of middle mediastinal masses include lymphadenopathy (infection, lymphoma, sarcoidosis, metastasis), aortic arch aneurysm, enlarged pulmonary artery, foregut duplication cyst (bronchogenic, esophageal, and neurenteric cyst), pericardial cyst. As reported in this case thymoma might arise in the middle mediastinum and should be considered in the differential diagnosis of middle mediastinal tumors especially in patients with myasthenia symptoms.

CONCLUSION
The imaging features of ectopic middle mediastinal thymoma are similar to those of usual anterosuperior mediastinal thymoma. Even though extremely rare thymoma should be included in the differentials of middle mediastinal tumor.

References
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