

## AB009. Lessons learned from non-therapeutic thymectomies

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**Background:** To review the incidence of non-therapeutic thymectomies at our institution, and to identify preoperative imaging features to assist in reducing the incidence.

**Methods:** Retrospective review of consecutive patients undergoing thymectomy for an anterior mediastinal lesion at a single institution over a 13-year period. Preoperative clinical features were reviewed. Preoperative computed tomography (CT) scans were reviewed for features of the anterior mediastinal lesion, including mean attenuation, presence of calcification, lesion margins, and location. In some cases, fluorodeoxyglucose positron emission tomography (FDG-PET) was performed and SUV measured. Final histopathological diagnosis was reviewed. Non-therapeutic thymectomy was defined as a thymectomy for lymphoma or benign disease, in the absence of clinical features of myasthenia gravis.

**Results:** One hundred and five thymectomies were performed. Sixty-three thymectomies (60%) were performed for thymic neoplasm [thymoma (n=60) or thymic carcinoma (n=3)]. The rate of non-therapeutic thymectomy was 13% (n=14). Of the non-therapeutic thymectomy specimens, most were cystic lesions (n=6) and thymic hyperplasia (n=3). Mean CT attenuation of the lesions was higher overall in the therapeutic group versus the non-therapeutic group (52 vs. 23 HU, P<0.005). For resected thymomas, attenuation (HU 57) was higher compared to lesions in the non-therapeutic group: hyperplasia (18 HU, P<0.005), cysts (22 HU, P<0.005), benign thymic tissue (30 HU, P<0.005) and lymphoma (HU 41, P=0.009). Mean age of patients with thymoma was significantly higher than for age of patients

with non-therapeutic resection of thymic hyperplasia (62 vs. 49 years, P=0.003). Twenty patients underwent FDG-PET scan (therapeutic group 15, non-therapeutic 5). There was no significant difference in FDG uptake between thymoma, and lesions in the non-therapeutic group. Of the non-therapeutic thymectomy group, none underwent preoperative magnetic resonance imaging (MRI).

**Conclusions:** The non-therapeutic thymectomy rate was 13%. Higher CT attenuation and higher age were significant differentiators of thymic neoplasm from benign pathology. Of the patients who underwent non-therapeutic thymectomy, none were investigated with preoperative MRI. FDG-PET did not differentiate thymoma from benign pathology. Attention to the above imaging and demographic features, and inclusion of MRI in the preoperative work up, may help reduce the rate of non-therapeutic thymectomy.

**Keywords:** Anterior mediastinal masses; thymoma; imaging

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### Footnote

*Conflicts of Interest:* All authors have completed the ICMJE uniform disclosure form (available at <https://med.amegroups.com/article/view/10.21037/med-22-ab009/coif>). The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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