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Role of flourine-18 fluorodeoxyglucose positron emission tomography in thymic pathology.

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OBJECTIVE: To evaluate the utilization of positron emission tomography (PET) scan with fluorine-18 fluorodeoxyglucose (FDG) in thymic pathology. METHODS: Twenty-five consecutive patients with thymic pathology underwent FDG-PET after being evaluated by computed tomography (CT). The indication for CT was myasthenia gravis in 10, anterior mediastinal mass in 7, and recurrent thymic tumor after surgical excision in 8 patients. The results of PET were compared with results obtained by CT, and histopathologic examination of the surgical specimens. RESULTS: All mediastinal abnormal thymic tissue showed FDG uptakes. FDG-PET managed to differentiate between thymic hyperplasia and thymoma in myasthenia gravis group (n=10) in which CT images were questionable in two patients. There was one case of ectopic thymic tissue which was not diagnosed preoperatively. There were no false-negative results for both CT and FDG-PET in seven patients with thymoma presented as anterior mediastinal mass. However, PET scan predicted thymic carcinoma in one patient. PET was superior to CT scan in localization of recurrent thymoma in two patients, and equal to CT in detecting metastatic lesions in six patients during the follow-up after thymoma excision. CONCLUSIONS: In myasthenia gravis, selective use of FDG-PET is useful in differentiating thymoma from hyperplasia, especially when CT scan is controversial, but fails to recognize ectopic thymic tissue. FDG-PET may differentiate thymoma from thymic carcinoma. FDG-PET is also useful in follow-up patients, who underwent thymoma excision, when there is suspicion of recurrence or metastasis.

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