Editorial



# Direction of further investigation into microscopic thymoma

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Thymoma plays an important role in the initiation of the autoimmune response to acetylcholine receptor (AchR), which leads to myasthenia gravis (MG) (1). Because thymoma, unlike normal thymus tissue, does not have medullary epithelial function and lacks autoimmune regulator expression, negative selection for T cells does not work efficiently. Consequently, many types of autoantibody including anti-AchR antibody are produced.

In some clinical situation, microscopic thymoma is discovered by chance in an MG patient without solid thymoma. Because of the rareness, the entity of this phenotype and the course of the development remain unknown (2). But this phenotype is attracting attention in the regard of the relationship with MG development.

A report from Fukuhara and his colleague showed some clues to elucidate it (3). They found 5 cases of microscopic thymoma in their retrospective analysis. All cases were multifocal type A thymoma in pathology. In comparison to conventional solid thymoma, preoperative anti-AchR Ab titer was significantly higher.

One of the interesting issues is the development and the natural history of this phenotype. The authors quoted that microscopic thymoma is considered to be precursor of thymoma. But most of them are multifocal lesions. A question is how they grow. Clinically, it is quite rare to see multifocal solid thymoma, compared to the incident ratio of microscopic thymoma in the literatures (3). In other words, only limited lesions grow, suggesting a selection mechanism for those microscopic thymoma. The elucidation of the mechanism is also intriguing in an oncological point of view.

Another issue is ectopic microscopic thymoma. This is very important because it might be related with limitations on surgical treatment for thymoma and MG. For example, the removal of thymoma does not necessarily prevent future onset of MG (1). MG exacerbation can be the most serious adverse effect after the surgery. Alternatively, there is a thymoma case in which MG is not detected preoperatively, but the symptoms of MG emerge postoperatively (4). These cases could be related with ectopic microscopic thymoma. In this regard, I totally agree with the author's comment on the surgical technique of MG surgery. The thymic tissue and perithymic fat tissue should be completely removed and carefully evaluated, keeping possible ectopic microscopic thymoma in mind.

There are more questions on this phenotype. How different is this from conventional thymoma? Can we predict it before the surgery? How much do we need to prepare for it? Little is known at the moment. We need to aware the phenotype in clinic, accumulate cases, and elucidate the pathology and the mechanism.

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