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Insufficient Experience in Thyroid Fine-Needle Aspiration Leads to Misdiagnosis of Thyroid Cancer (*Endocrinol Metab* 2014;29:293-9, Jung Il Son et al.)

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We thank Professors Yi and Lee for their instructive comments on our article in *Endocrinology and Metabolism* [1].

Thyroid nodules are a common clinical problem and the incidence of thyroid nodules has increased with the wide use of thyroid ultrasonography (US). Fine-needle aspiration (FNA) is commonly used as the first-line screening test for patients with thyroid nodules, and is the most reliable diagnostic test because of its high sensitivity and specificity. Thyroid tumors are relatively small compared to tumors in other areas, but their detection and resection have increased with the routine use of US and FNA. Consequently, thyroid cancer is becoming the most frequent cancer in Korea. However, as mentioned in the letter, about 20% of the FNA results are classified as 'atypia of undetermined significance (AUS),' which has a 5% to 20% risk of malignancy. Repeat FNA is the best way to proceed, but a partial or total thyroidectomy is performed in many cases of AUS, despite its low malignancy rate. In some cases, the patients do not return to the hospital because of fear of the FNA procedure. Therefore, a reduction in the uncertainty of the FNA results is very important to decrease the economic burden of diagnosis and treatment, and unnecessary operations.

Sufficient operator experience is an essential, but easily overlooked, factor. FNA is easy and safe, but many clinicians try FNA without sufficient training. Unskilled operators have problems with correct needle localization or collecting an adequate specimen from 'difficult' nodules. In our previous study, unskilled operators had a higher false negative rate, and relatively low sensitivity for detecting thyroid cancer. The diagnostic indices varied among operators, especially in the unskilled group, so training programs and supervision/feedback system from a skilled person should be intensified to decrease uncertain or even false FNA results.

Molecular analysis might be a good alternative. Many molecular markers have been evaluated to improve the diagnostic accuracy for indeterminate nodules. Large prospective studies have confirmed the genetic markers BRAF, Ras, and RET/PTC and protein markers like galectin-3. Moreover, these markers are associated with prognostic factors, such as extrathyroid extension, metastasis, and tumor recurrence [2]. Markers help not only the diagnosis of indeterminate cytology but also patient management after thyroid cancer is confirmed. The routine use of these markers has some limitations, but it is likely that some combination of molecular markers will be used more widely to optimize the management of patients with indeterminate cytology on FNA specimens.

Again, we appreciate Professors Yi and Lee's judicious and discerning comments on our study.

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CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Son JI, Rhee SY, Woo JT, Park WS, Byun JK, Kim YJ, Byun JM, Chin SO, Chon S, Oh S, Kim SW, Kim YS. Insufficient experience in thyroid fine-needle aspiration leads to misdiagnosis of thyroid cancer. Endocrinol Metab (Seoul) 2014; 29:293-9.
2. Xing M. BRAF mutation in papillary thyroid cancer: pathogenic role, molecular bases, and clinical implications. Endocr Rev 2007;28:742-62.