

Fine-Needle Aspiration Biopsy with BRAF Analysis and Elastography are Slightly More Efficient in Diagnosing Papillary Thyroid Cancers than FNAB and Thyroid Ultrasound

cancers at operation. When using USE and BRAF mutations, 15 of 31 (48%) turned out to be cancers.

Conclusions

This retrospective study concerns thyroidectomies and/or lobectomies carried out for 164 thyroid nodules, of which a very high percentage were revealed to be cancers. They were investigated by ultrasound, USE, FNAB and BRAF mutations. The

combined use of BRAF and USE was useful since in some elastic (scale 1) nodules BRAF mutations were positive; also some stiff (scale 4), but BRAF-negative, nodules were revealed to be malignant. Only the combination of the two results suggested the need for operation. Nevertheless, in a few cases BRAF analysis and USE failed to recognize the malignant nature of the nodule.

ANALYSIS AND COMMENTARY ● ● ● ● ●

The authors themselves suggest that this preliminary study should be followed by a prospective multicenter study. Other approaches, such as the gene microarray technique should be included. Yet, the cost of such an experiment would be very high and the success probably doubtful.

The present study, though interesting, has some clear shortcomings. For instance, only patients who underwent surgery are included in the study. This creates a considerable bias, since it is unlikely that in this center all patients underwent surgery. Moreover, although follicular cancers are mentioned, no separate results were given, despite the fact that they are known to be different in terms of BRAF mutation frequency and elasticity. Furthermore, it is not clear why the authors did not compare the combination of ultra-

sound and BRAF mutations instead of ultrasound and FNAB. Finally, even though not discussed specifically in the text, but shown in one figure, approximately 5% to 7% of nodules considered as benign based on USE scale 1 and absence of BRAF mutations were eventually identified as being malignant. Therefore, even in this situation, the clinical decision cannot rely fully on these two criteria.

However, the approach has the advantage of being easily feasible with a moderate increase in cost. Also, the technique of USE is still in a developing stage; at present, the more powerful, less subjective, and more objective shear wave elastography is becoming available (4). It is therefore likely that in the near future the information about the elasticity of thyroid nodules will become a routine addition to the present ultrasound techniques, although it brings only a small advantage over the currently available techniques.

References

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