

Malignant Nodular Goiter

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Nodular goiter is a common phenomenon in general population. Although the ratio of malignant nodular goiter is much more less than that of benign one, we still need to differentiate them very carefully. Conventional palpation played a pivotal role in preliminary impression. Fortunately, gray scale ultrasonography was now easily used as diagnostic tool for thyroid diseases for several decades. Nowadays, thyroid ultrasonography is the standard and routine investigation for diffuse and nodular thyroid disease entities. The practical application of color doppler ultrasonography was reported in 1988, because it is a cost-effective and non-invasive technique for diagnosing diffuse and nodular goiter diseases. Doppler ultrasonography was ever reported in evaluation of nodular lesions in Graves' hyperthyroidism and preoperative evaluation of Graves' hyperthyroidism. Toxic nodular goiters are a rare thyroid entity, however, color doppler ultrasonography provides a rapid pathway to differentiate their autonomy from nodular lesions in Graves' hyperthyroidism. In comparison with thyroid nuclear scan, gray scale and color doppler seem to be more convenient and less radio-burden. In 1991, first report was carried out the possible application of color doppler ultrasonography in the pathology of non-toxic nodular goiter.

In addition, gray and color doppler ultrasonography might be safe, simple, convenient and non-invasive methods for evaluation the possible malignancy in nodular goiters or parathyroid adenoma/hyperplasia for preoperative investigation. Meanwhile, we can use color doppler to detect vascularity, and pathological change of nodular goiters seems to be related with the specific pattern of vascularity and peak systolic velocity in intranodular vessels. Fine-needle aspiration cytology (FNAC) further provided a reliable clue to differentiate malignant nodular goiter from benign one. We could choose the probable malignant nodular goiter to perform FNAC by ultrasonographic technique. However, an experienced cytopathologist is needed for reading such cytology. Therefore, gray scale and color Doppler ultrasonography are the dispensable tools for preoperative preparation for goiters in combination of FANC for modern medical behaviors.