



Letter to the editor

## An approach to diagnostic dilemma in thyroid cytopathology

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Dear editor;

The article in the last issue of the Journal of Pathology of Nepal entitled “Role of fine needle aspiration cytology in the diagnosis of thyroid lesions” (Journal of Pathology of Nepal (2012;2:186-8) struck a chord with me because I believe almost all pathologists have had a sour experience with cytological evaluation of thyroid lesions. The authors too record a false negative case where a cytological report of adenomatous goiter was discrepant with the final histopathological diagnosis of follicular carcinoma. I congratulate the authors for not having come across, in their correlative study of 20 patients, a disappointing situation when a papillary carcinoma is misdiagnosed as a colloid goiter on fine needle aspiration cytology (FNAC). Most of us must have been dismayed when a colloid goiter we had reported on cytology turns out to be papillary carcinoma on histology and we are reminded by the clinician about our incapacity to differentiate between benign and malignant lesions which has resulted on the patient being subjected to a second difficult operation which could have easily been managed by an initial near-total thyroidectomy had we reported it correctly. Cystic change is known to be present in about 25% of papillary carcinoma and if the cystic area is sampled, scattered cyst macrophages are inevitable in a colloid-rich background which prompts an impression of cystic change in colloid goiter.

I feel the only way to avoid this embarrassing situation is to incorporate both the clinical information and the ultrasonographic features along with cytopathological features in the final report as shown in Table 1. Whenever a diagnostic dilemma necessitates a repeat FNAC, a structured tabulated reporting format on a single paper allows the clinician to tick the presence or absence of pertinent clinical features like history of neck irradiation and thyroid cancer in family, firmness of nodule, rapid growth, fixation to adjacent structures, vocal cord paralysis and regional lymphadenopathy. While performing FNAC to sample the solid area of the solidocystic lesion, the radiologist records important ultrasonographical features like the size of the lesion and ticks the relevant specified feature regarding echogenicity, composition, microcalcification, halo, margins, internal blood flow, lymph nodes. He also mentions the specimen submitted. The pathologist analyzes the smears with the help of clinical and ultrasonographical information and encircles the appropriate category according to the Bethesda system with implied risk of malignancy and recommended clinical management. Similar reporting format can also be utilized to evaluate colloid-poor proliferative thyroid lesions that cannot be categorized on initial FNAC. A nondiagnostic or inconclusive repeat FNAC report should be followed by a surgical procedure for histopathological evaluation.

*(Continued on following page)*

**Table 1: Evaluation of nodular thyroid lesion****Clinical Features**

Features	Present	Absent
H/O Neck irradiation		
H/O Thyroid cancer in family		
Firmness of nodule		
Rapid growth		
Fixation to adjacent structures		
Vocal cord paralysis		
Regional lymphadenopathy		

**Ultrasonographic Features**

Features	Description
Size	
Echogenicity	Hypoechoic / Hyperechoic
Composition	Solid / Predominantly solid / Mixed solidocystic / Predominantly cystic / Cystic
Microcalcification	Present / Absent
Halo	Present / Absent
Margins	Regular / Irregular
Internal blood flow	Present / Absent
Lymph nodes	Heterogenous echotexture / Calcification / Cystic areas / Round / Mass effect
Specimen submitted	

**Cytopathologic Impression**

Diagnostic category	Implied risk of malignancy (%)	Recommended clinical management
Nondiagnostic or Unsatisfactory	1-4	Repeat FNA with ultrasound guidance
Benign	0-3	Clinical follow-up
Atypia of undetermined significance or Follicular lesion of undetermined significance	~5-15	Repeat FNA
Follicular neoplasm or Suspicious for a follicular neoplasm	15-30	Surgical lobectomy
Suspicious for malignancy	60-75	Near-total thyroidectomy or surgical lobectomy
Malignant	97-99	Near-total thyroidectomy

In the end, it is imperative for clinicians, radiologists and pathologists to understand and accept with humble dignity that even with exhaustive exercise, some thyroid lesions, like some lesions in any other part of the body, defy categorization on FNAC and must be subjected to thorough histopathological evaluation for proper management of the patient.

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