FINE-NEEDLE ASPIRATION BIOPSY

■ *To the Editor*: We would like to respond to Dr. Beham's recent article on fine-needle aspiration biopsy to evaluate thyroid nodules.[1] We agree with Dr. Beham's assessment that fine-needle aspiration biopsy offers an accurate and relatively inexpensive method of evaluating thyroid lesions; however, this article fails to address some important technical and reporting issues.

First, accurate cytologic interpretation requires properly prepared smears with adequate cellularity and, often, knowledge of laboratory and clinical data. We currently recommend preparing two to four alcohol-fixed direct-smear glass slides. After these slides are prepared, the needle should be rinsed in CytoLyt transport solution (Cytyc Corp., Marlborough, Mass) to optimize cell recovery. After additional passes, the needle should also be rinsed in the same vial of CytoLyt.

In March 1992, our laboratory began using a Cytyc ThinPrep Processor (TP) (Cytyc Corp., Marlborough, Mass) for urine specimens. Subsequently, we have increased the number of nongynecologic specimens processed by the instrument. We recently published the results of our experience with the TP method.[2] Most notably, the number of unsatisfactory specimens decreased, from 17% of selected nongynecologic specimens, to 1% after TP implementation. We are now gradually increasing the number of thyroid specimens processed by the TP method. Our cytology laboratory processed 3161 thyroid aspirates from January 1983 through June 1994. Of these, 2312 (73%) were negative for malignant cells, 325 (10%) contained abnormal cells, 175 (6%) were positive for malignant cells, and 349 (11%) were unsatisfactory specimens. The TP process should reduce the number of unsatisfactory thyroid specimens and improve patient care.

Smears with adequate numbers of cells are critical for the proper identification of thyroid lesions. Kini and Smith-Purslow recommended "eight to 10 tissue fragments of well-preserved follicular epithelium on each of two slides" as the minimum requirement for a satisfactory specimen.[3] Inadequate cellularity may result if the lesion is sclerotic, necrotic, quite vascular, or cystic.[3] Poorly fixed or air-dried smears can also cause specimen inadequacy.[3]

DIANA F. FISCHLER, DO, AND
CHARLES V. BISCOTTI, MD
Department of Anatomic Pathology
The Cleveland Clinic Foundation

REFERENCES

1. **Beham R.** Fine-needle aspiration biopsy to evaluate thyroid nodules. Cleve Clin J Med 1994; **61**:246–247.
2. **Toddy SM, Fischler DF.** Utility of the ThinPrep Processor in nongynecologic specimens [abstract]. Am J Clin Pathol 1994; **102**:537.
3. **Kini SR, Smith-Purslow MJ.** Adequacy, reporting system, and cytopreparatory technique. In: Kline TS, editor. Guides to clinical aspiratory biopsy thyroid. New York: Igaku-Shoin Medical Publishers, Inc., 1987:13-28.

■ *In reply*: I agree with Drs. Fischler and Biscotti that the diagnostic accuracy of fine-needle thyroid aspirations is greatly affected by aspiration technique and sample preparation and processing.

I routinely use a 22-gauge needle attached to a 20-cc syringe to make six to eight passes through a nodule in order to obtain tissue for two to four direct-smear glass slides. These are fixed immediately with alcohol or more recently, with ProFixx Pump Spray Cytology Fixative (Baxter Diagnostics, Glendale, Calif).

I have also used CytoLyt transport solution for needle rinsing and have found it to be especially useful in cystic nodule aspirates, which often have scant cellularity. Employing these techniques over the past 12 months has yielded a rate of unsatisfactory specimens of 6%.

RICHARD A. BEHAM, MD
Innova Medical Services, Inc.
Brooklyn, Ohio