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Fine Needle Aspiration Cytology Without Needle Manipulation to Reduce the Risk of Occupational Infection in Healthcare Personnel

To the Editor:

Accidental sharps injury is a major cause of occupation-related transmission of infectious diseases.[1] Percutaneous injury, usually inflicted by a hollow-bore needle, is the most common mechanism of job-related human immunodeficiency virus infection in healthcare personnel.[2]

Public health authorities and committees for clinical laboratory standards guidelines for the protection of laboratory workers from job-related exposure to infectious diseases recommend that used needles not be recapped, removed from disposable syringes, or otherwise manipulated.[3]

Fine needle aspiration cytology (FNAC) is a widely accepted diagnostic procedure in which a hollow-bore device and the removal of the contaminated needle prior to expulsion of its contents are required.[4] The risk of injury by needle during FNAC appears to be low (0.12%),[5] but this still represents a real hazard.

TABLE
DIAGNOSTIC EFFICACY OF THE TWO METHODS OF FINE NEEDLE ASPIRATION CYTOLOGY

	FNAC Method	
	Traditional	**Modified**
Sensitivity	35/37 (94.6%)	42/45 (93.3%)
Specificity	42/44 (95.5%)	37/39 (94.9%)
Positive predictive value	35/37 (94.6%)	42/44 (95.5%)
Negative predictive value	42/44 (95.5%)	37/40 (92.5%)

FNAC = fine needle aspiration cytology.

However, there is a modified method of FNAC that eliminates the needle manipulation.[6] If the procedure is initiated with 2 mL of air in the syringe, after aspiration is finished, the residual air will be used to empty the needle without its manipulation.

Despite its apparent advantage, this modified technique has been insufficiently promoted and there have not been published studies of its diagnostic accuracy. Thus, we were impelled to compare these two FNAC methods (ie, conventional and modified) regarding the quantity and the quality of the cytologic material obtained with them.

The two methods were used in alternating order on each one of 365 palpable lesions on the head, neck, and breasts. The microscopic scoring system devised by Mair et al.[7] was used to compare the two methods regarding materials obtained. Sensitivity, specificity, and predictive values were determined for both methods using the biopsy result as the gold standard. Multiple logistic regression was used to identify independent predictors of achieving a diagnosis with each method.

The two techniques yielded similar diagnostic accuracy with values of more than 90% for all indicators (sensitivity, specificity, and predictive values) (Table). No statistically significant differences were observed between the two methods regarding the diagnostic adequacy of the cell samples obtained. The only differences observed were related to the order of use in a lesion: the best results were obtained with the first puncture applied, regardless of FNAC method.

FNAC is used by clinicians, radiologists, and cytopathologists for the diagnosis of superficial and deep-seated lesions. It can be performed without requiring manipulation of the contaminated needle, thus reducing the risk of needlestick while retaining diagnostic accuracy. Moreover, with this modified technique, less force is needed to create the required negative pressure in the syringe; however, patients did not relate differences in perceived pain.

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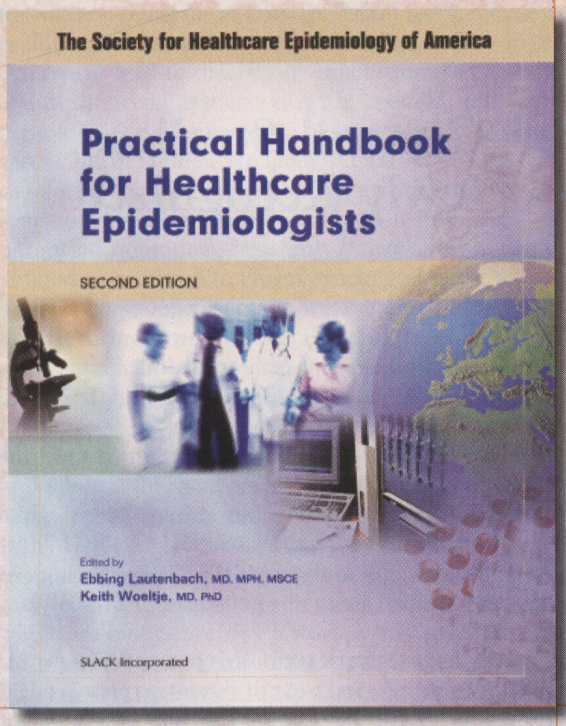

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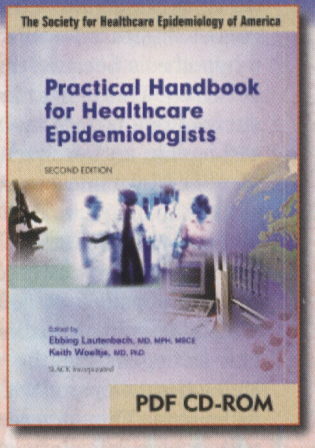

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