Comparison of smear cytology and cell blocks in detection of respiratory cancer

To the Editor: We studied 3300 samples of body fluid specimens in our department during the period of April 1993 to December 2002. Clots were prepared from 273 cases (8.27%). Fifty-two percent of these were respiratory specimens, including sputum, broncho-alveolar lavage (BAL) and pleural effusion, performed to rule out malignancy. The clot was prepared after centrifugation at 2000 rpm for 10 minutes, paraffin embedding was followed by H&E sections, and if needed, periodic acid-Schiff and mucicarmine stains. Cytopathological findings based on smeared slides and/or cell blocks (clots) were compared with tissue diagnosis as the gold standard. The results denote near equal sensitivity and specificity for the cell block and combined methods (Table 1 and 2). Study of smeared slides alone showed lesser sensitivity and specificity (Table 3). Also, the clot study detected five more malignant neoplasms than smear alone. Cytological examination of body fluid is a routine procedure in the detection of malignancy. Clots prepared from body fluids and fine-needle aspiration (FNA) can be useful for establishing a more definitive diagnosis by using routine histopathology and ancillary methods.^{1,2} Cell blocks from sputum or brushing or washing may also be of value for the diagnosis of carcinoma. Cell blocks from FNA samples are useful for microhistology to detect architectural features not evident in some smears, and for cytochemistry and immunohistochemistry.³ The

Table 1. Sensitivity and specificity of clot sections vs. the "gold standard" tissue diagnosis.

Clot results	Histology		
	Malignant	Benign	Totals
Malignant	26	4	30
Benign	10	24	34
Totals	36	28	64

Specificity=72.2%, Sensitivity=85.7%

Table 2. Sensitivity and specificity of clot sections/smear cytology (combined) vs. the "gold standard" tissue diagnosis.

Smear results	Histology		
	Malignant	Benign	Totals
Malignant	18	4	22
Benign	7	23	30
Totals	25	27	52

Specificity=72.0%, Sensitivity=85.2%. In the combined results, 52 cases were the same (false negative or positive, true negative or positive), but in 12 cases the results differed between the two methods.

Table 3. Sensitivity and specificity of smear cytology vs. the "gold standard" tissue diagnosis.

Smear results	Histology		
	Malignant	Benign	Totals
Malignant	21	5	26
Benign	15	23	38
Totals	36	28	64

Specificity=58.3%, Sensitivity=82.1%

accuracy of the cell block is high, particularly in histological typing of cancer⁴ and increases the sensitivity and specificity of sputum cytology.⁵ Our results are comparable with other identical studies. Therefore preparing a cell block is highly advocated in every fluid sample if it is feasible.

Enssieh Shafigh
Sepideh Siadat

Correspondence:
Enssieh Shafigh, MD, AP,
Assistant Professor
Department of Pathology
Shahid Beheshti Hospital
University of Medical Sciences
Babol, Iran

Tel: 98-111-2252071-5
Fax: 98-111-2251664
eshafigh@yahoo.com

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