neoplasms.

Papillary Clara Cell Carcinoma of the Human Lung.

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Although the function of the non-ciliated bronchiolar epithelial cell (Clara cell) is poorly understood, its neoplastic potential in experimented animals is well recognized. Observations in humans also indicate that the Clara cell is implicated in the development of some bronchioloalveolar cell adenocarcinomas.

The present observations are based on 7 patients with lung tumors shown by EM to be composed of Clara cells. All patients were adults; 6 were females and 1 was a male. The tumors were peripheral, isolated masses with no particular distribuation but endoscopically shown to be beyond bronchi. Histologically, they all were well differentiated adenocarcinomas with striking papillary features closely resembling papillary carcinomas of the thyroid gland. The possibility of metastatic disease, however, was ruled out in every instance. Ultrastructurally, the cells exhibited characteristic electron dense granules located at the apical portion of the neoplastic Clara cells.

Three of our patients showed tumors of the type described by Spencer et al., as "intrapulmonary, papillary tumor suggesting Clara cell origin" (Cancer 45: 1486, 1980). One of these tumors had extended to the mediastinum and another had given metastasis to a rib. Remarkably, the metastasis retained the striking papillary features of the main lesion.

Reaction of Bronchoscopic Biopsy Specimens with Monoclonal Antibodies Directed Against Small Cell Lung Cancer (SCLC) Associated Antigens.

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Immunostaining with a panel of monoclonal antibodies directed against SCLC associated antigens has been performed in 10 patients with SCLC and in 5 patients with squamous cell carcinoma (SCC). Biopsy specimens were procured by flexible and rigid bronchoscopy. Immediately after bronchoscopy the specimen was placed in a cryostant embedding medium and subsequently snap frozen in freon or liquid nitrogen. An additional specimen was taken and processed for routine histology. Cryostat sections were stained with monoclonal antibodies using an indirect immunoperoxidase technique. SCLC cells stained specifically in the biopsies, concordant with the histologicaldiagnosis (table 1).

	Neuroendocrine ag.				Epithelial ag.	
Histology	MOC-1	MOC-21	MOC-52	MOC-51	MOC-31	RGE-53
SCLC (primary)	7/7	7/7	7/7	4/7	7/7	4/4
SCLC (relapsing)	3/3	3/3	3/3	3/3	3/3	2/3
SCC	0/5	0/3	0/3	0/3	5/5	2/4

Application of monoclonal antibodies on bronchoscopically procured biopsy specimens provides a reliable method of staining specific antigens in lung cancer. Our results show that this method is also suitable for application on very small biopsy specimens such as those procured by flexible bronchoscopy. Therefore immunohistochemistry appears to be helpful in distinguishing SCLC from non SCLC especially when morphology can not be appreaiated due to crushing artifacts.

Cytokeratin Expression by Neuroendocrine Neoplasms of the Lung.

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We undertook to study the cytoskeletal features of the spectrum of neuroendocrine (NE) neoplasms of the lung.

Four typical carcinoids, 2 well-differentiated NE carcinomas, 3 intermediate cell and 3 small cell NE carcinomas were investigated. Their NE differentiation was determined by electron microscopy and by their light microscopic immunoreactivity for neuron specific enolase, serotonin, and one or more neuropeptides. Cytokeratin expression was investigated by immunofluorescence of unfixed frozen sections. Four monoclonal antibodies were used including 2 of broad spectrum; one commercial monoclonal and one polyclonal were also applied. All neoplasms thus studied displayed immunoreactivity for 1 or more of those antibodies. Sequentially stained step sections showed convincing immunoreactivity for cytokeratin and 1 or more NE markers in single neoplastic cells. Using gel electrophoresis of microdissected cytoskeletal proteins, appreciable amounts of cytokeratin polypeptides Nr.'s 8, 18 and 19 were detected. None of these neoplasms immunostained with antibodies against other intermediate filament proteins nor were the latter materials convincingly demonstrated on get electrophoresis.

We conclude that bronchopulmonary NE neoplasms express cytokeratin variants instead of or possibly in addition to neurofilaments. Therefore, the finding of cytokeratin in lung neoplasms does not rule out their neuroendocrine differentiation. Similarly, the rigid equation of cytokeratin expression or other intermediate filament proteins expression