Bronchoscopic Laser Photocoagulation of Superficial Cancer of the Bronchi


Multifocal squamous cell carcinoma in the bronchus of the anterior segment of the right lung and in the subsegmental bronchus of the posterior subsegment of the left upper lobe was diagnosed in a 61-year-old man. The right-sided upper lobectomy followed by Nd:YAG laser photocoagulation of the superficial cancer in the left side resulted in total eradication of the tumor. Subsequent follow-up examinations for three years have revealed no relapse of tumor growth. *(Chest 1990; 98:235-36)*

**HDPDT = hematoporphyrin derivative laser phototherapy**

Bronchoscopic Nd:YAG laser therapy interferences in cases of lung cancer are usually of a palliative character and are performed for restoration of the trachea and major bronchi permeability and for purposes of stopping bleeding. Complete destruction of a neoplasm is possible, evidently only in the initial stages of the disease, a time when it is detected extremely rarely. Hematoporphyrin derivative laser phototherapy (HDPDT) was used for this purpose.

We describe a case of complete endobronchial destruction of superficial bronchus cancer by Nd:YAG laser therapy in the presence of a primarily multifocal form of neoplasm.

**CASE REPORT**

A 61-year-old man was admitted to the hospital on September 30, 1985 with complaints of weakness and cough. He had been ill for about six months.

A shading of the anterior segment of the right upper lobe was detected on chest roentgenograms.

Bronchoscopy disclosed that the lumen of the medial subsegmental bronchus B of the right lung was obstructed by an expansion of pink tissue. A biopsy specimen revealed squamous cell carcinoma. A small area of infiltration (<0.5 cm²) of the mucous membrane with an uneven surface was detected in the area of the intersubsegmental spur of the posterior subsegment of the left upper lobe (B₁₁). A biopsy specimen revealed squamous cell carcinoma (Fig 1). A repeated bronchoscopy and a specimen from a repeated biopsy of the infiltration site in B₁₁ of the left lung confirmed the diagnosis of squamous cell carcinoma.

On October 14, 1985, a right-sided upper lobectomy was performed. On October 24, 1985, bronchofiberscopy with Nd:YAG laser was performed under local anesthesia. A BF-ITB "Olympus" bronchoscope was used (Fig 2). Photodestruction of the tumor of the intersubsegmental spur B₁₁ of the left upper lobe was achieved with 13 laser impulses each of 0.5-s duration at a power level of 40 W.

Repeated bronchofiberscopy with biopsy at 2, 6, 12, 18, 24, and 36 months did not reveal any endoscopic or histologic signs of tumor growth.

**FIGURE 1.** Biopsy material from the site of intersubsegmental spur B of the upper lobe of the left lung: squamous cell carcinoma (hematoxylin-eosin, original magnification ×100).

**DISCUSSION**

The superficial cancer of subsegmental bronchus in our patient was occult, asymptomatic, and an unexpected finding at bronchofiberscopy. The observation attests to the high diagnostic possibilities of bronchoscopy and is consistent with the data of Woolner et al and Marsh et al who established the presence of bronchoscopic signs of tumor growth in the form of a slight thickening and hyperemia of the mucous membrane and unevenness of the interbronchial spur in the majority of patients with early invasive cancer and cancer of the bronchus in situ. In clinical practice, central cancer of the lung at the stage of early invasive growth is detected extremely rarely, since there are no clinical manifestations of the disease and patients do not consult the physician for medical help. Very few patients with early invasive roentgenographically occult cancer had their conditions revealed at bronchoscopy, which was performed when screening smokers of 45 years of age and older to detect tumor cells in the sputum. 

Early invasive cancer of the bronchi may also be detected by chance during bronchoscopy performed in connection with other diseases of the lungs. The difficulties of bronchoscopic diagnosis of superficial bronchogenic cancer are...
This report presents a case of tracheal undifferentiated carcinoma with marked lymphocytic infiltration. The tumor was histologically similar to the so-called lymphoepithelioma of the nasopharyngeal region. After resection of the tumor, radiotherapy was performed. No recurrence has been found for six years. To our knowledge, this so-called lymphoepithelioma in the trachea is the first case reported in the literature.

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The so-called lymphoepithelioma is a tumor usually occurring in the nasopharyngeal mucosa. The tumor is histologically regarded as a nonkeratinizing or as an undifferentiated nasopharyngeal carcinoma with a marked amount of stromal lymphocytes. Due to its biologic characteristics, this tumor has been considered to be highly radiosensitive. We had a patient with tracheal carcinoma which was histologically compatible with the so-called lymphoepithelioma of the nasopharyngeal region. Radiation therapy was quite effective in this case. To our knowledge, this is the first case report which elucidates a so-called lymphoepithelioma in the trachea.

CASE REPORT

A 71-year-old woman had suffered from progressive asthmatic dyspnea for about one and a half years. Fiberoptic bronchoscopy revealed a polypoid tumor in the posterior wall of the trachea about 3 cm below the vocal cord. The upper airway, including the nasopharynx, appeared normal. A 35-mm long segment of the trachea, including the tumor and paratracheoesophageal lymph nodes, was resected. End-to-end anastomosis of the trachea was performed.

A polypoid yellowish-white tumor, measuring 26 × 20 × 21 mm, protruded into the tracheal lumen from the membranous part of the cervical trachea. The cut surface showed the tumor with a lobular structure destructively spreading into the adventitial parts of the trachea. Neither necrotic nor bleeding foci were evident (Fig 1).

Histologic small tumor nests consisting of large polygonal cells extended in an islet or trabecular pattern among lymphoid stroma (Fig 2). The tumor cells had pale cytoplasm without any evidence of keratinization or mucous production, and they were arranged in strands or sheets. Multiple lymphogenous metastasis was observed in the right paratracheal and paraesophageal lymph nodes.

After the operation a total dose of 51 Gy was irradiated to the

Undifferentiated Carcinoma with Prominent Lymphocytic Infiltration (So-called Lymphoepithelioma) in the Trachea*

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Figure 1. Section of tracheal tumor protruding into tracheal lumen. Tumor shows lobular structure (hematoxylin-eosin, original magnification × 10).