Bronchial carcinoid tumors: long-term outcome after surgery*

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The objective of the present study was to evaluate clinical condition and results of surgical treatment of patients with typical and atypical bronchial carcinoids. The study was based on retrospective analysis of a total of 96 patients (mean age 47.3 year, age range 21–76, 44 men and women 52), who were surgically treated for bronchial carcinoid between 1985–2001. We assessed symptomatology of the disease, type of surgical intervention, tumor histology and staging, and postoperative 5-year and 10 year survival rates. The main sign of disease was respiratory inflammation. The carcinoid syndrome was not found in any patient. Most patients (n=68) were operated for central form of the tumor. The micromorphological tumor diagnosis was established prior to surgery in 76.5% patients with the central form of carcinoid. Surgical treatment included lobectomy (n=49), bronchoplastic procedure (n=14), sleeve lobectomy (n=9), atypical resection and segmentectomy (n=11), pneumonectomy (n=7) and tumor enucleation (n=5). Histological analysis revealed typical carcinoid in 77 cases (80.2%) and atypical carcinoid in 19 (19.8%). Lymph nodes (N1 and/or N2) were examined by histology in 84 patients and lymph node metastases were found in 13 (19.4%) of 67 patients with typical carcinoid and in 5 cases (29.4%) of 17 with atypical carcinoid. In the postoperative period on patient died from embolism to the arteria pulmonalis. Postoperative complications (atelectasis, prolonged air leak, bronchopleural fistula) were observed in 11.4% of patients. Tumor relapse occurred only in two patients with typical carcinoid. Postoperative 5-year and 10-year rates amounted to 98.6% and 87.3%, respectively, in typical carcinoid 94.5% and 73.5% in atypical carcinoid. The survival rates of patients with typical and atypical bronchial carcinoids were not significantly different (p>0.05). The surgical management is the treatment of choice in bronchial carcinoids. Results of this study indicate that the 5-year survival in patients with either histological type of bronchial carcinoid is excellent and the prognosis of operated patients is very good even in the case of regional lymph nodes infiltration by the tumors.

Key words: Bronchial carcinoid, lung resection, survival.

The term “Karzinoide“ was first used by the German pathologist Oberndorfer in 1907 [20] for the description of a tumor resembling adenocarcinoma but with less malignant biological behavior. Carcinoids arise from the cells of diffuse neuroendocrine system called APUD system (Amine Precursor Uptake and Decarboxilation), occurring dispersedly in various organs [13]. The most frequent carcinoid localization is in gastrointestinal tract (73%) and the bronchopulmonal localization (25%), only a low number of carcinoids originate in different organs [17]. Carcinoids represent 2–5% of all pulmonary neoplasms [6, 8, 11]. Comparing the epidemiological data, Modlin and Sandor [17] found that in the course of the last decades the incidence of lung carcinoid increased. In comparison with the period of 1950–1969, when the proportion of lung localization was 10.2%, the pulmonary localization of carcinoid in the period of 1973–1991 amounted already to 32.7%.

The term “atypical“ carcinoid was designated by Arrigoni et al in 1972 [1]. At the present time carcinoid is described as a well differentiated typical carcinoid or intermediate-grade differentiated atypical carcinoid (neuroendocrine carcinoma). The atypical carcinoids account for approximately one third of all lung carcinoids [14].

A relatively rare incidence of carcinoid makes the pro-

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