

account of their epidemiological, clinical and pathological findings and surgical results obtained in 35 years.

Methods: In the years 1965–2000 forty-two children under 18 were operated on. Mean age: 14.8 years, two children were under 10. The rate of incidence is 5.1% of that for all thyroid carcinoma operations of the total age group ($n = 818$). The most frequent case was papillary carcinoma (32), there were 7 follicular and 3 medullary carcinomas. Cervical lymph node metastases occurred in 19 (45%). Characteristic histological changes were revealed in a comparative study for the pre- and post-Chernobyl periods. Cytofluorimetry was used to determine the DNA-content of tumorous cell nuclei for each type.

Results: 30 patients underwent total or near-total thyroidectomy. Surgical management of lymphatic metastases varied from regional node excision to radical neck dissection. Long-term mortality rate: 2.4% ($n = 1$), 25 years after surgery. Recurrence: local 3, lymph node 10, liver 1. There was significant increase in childhood and juvenile carcinomas after Chernobyl ($p < 0.05$). The moderate aneuploidy in tumor cell DNA-distribution differs from that of adults.

Conclusions: 1. Predominant in the childhood are papillary carcinomas and this structure is getting more frequent after Chernobyl. 2. Regional lymph-node metastases are common, but despite their DNA-aneuploidy do not influence prognosis. 3. Distant metastases are rare, with hardly any metastasis in bone. 4. The benign course of disease necessitates longer than 20 years follow-up.

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Thyroid cancer in children exposed to ionizing radiation in Belarus as a result of the Chernobyl accident

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Non-effective and delayed iodine prophylaxes made possible the accumulation of radioactive iodine in the thyroid gland in population suffered from the Chernobyl accident. The purpose of the study was to analyze an association between thyroid cancer spread (operation data) and estimated dose on the child thyroid in different regions of Belarus.

Subjects and Methods: 265 verified cases of childhood thyroid cancer were analyzed. Female -male ratio was 1.4: 1. Thyroid dose was estimated by using the empirical model. Average age of children at the accident was 3.0 ± 0.1 years old, at the moment of diagnosis - 11.0 ± 0.2 . Latent period was 8.0 ± 0.4 years.

Results: Out of 265 cases 51.7% children operated on for thyroid carcinoma lived in the Gomel oblast the moment of accident, 28.7% - in Brest oblast, 11.7% - Minsk oblast and 7.9% - in the rest three oblasts. According to estimations average thyroid dose was 0.89 ± 0.06 Gy. Children from Gomel oblast received the highest thyroid dose that was 1.38 ± 0.10 Gy ($p < 0.001$) compared with those who were from Brest oblast - 0.48 ± 0.03 Gy and from Minsk oblast - 0.08 ± 0.01 Gy ($p < 0.01$). Distributions of pT categories among children living in different regions of Belarus at the accident showed that the frequency of pT4 was approximately similar in Gomel, Minsk and Brest oblasts - 42.4%, 50% and 48.4%, respectively. There was a tendency of the increase in the pT2 frequency from Gomel oblast (22.7%), Brest oblast (23.7%) to Minsk oblast (35.5%) although it was not significant. The occurrence of pT1 was significantly higher among children from Gomel oblast (34.5%) compared with those from Minsk oblast (16.1%) while the latent periods in children with different pT categories did not differ (7.7-8.4 years).

Conclusion: Received data suggest that there might be an association between doses received to the thyroid and tumor sizes in children operated on for thyroid cancer but further study needs to be done.

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Papillary thyroid carcinoma - importance of elective lymph node dissection in staging and therapy

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Introduction: The numerous literature data have shown that lymph node metastases in papillary thyroid carcinoma (PTC) strongly impact the occurrence of relapse.

Aim: Aim of this study was to evaluate the impact of elective lymph node dissection in precise staging and therapy of disease.

Patients and Methods: From 1981. to 2000. we have operated 236 patients with PTC. Age: 44.6 ± 14.3 years at diagnosis (Median: 44; Rang 7-80). Sex ratio: F/M-3.7/1. a) Total thyroidectomy (TT) with elective dissection of central and lower jugular lymph nodes of the neck for frozen-section histology was performed in 181 (76.7%) pts. b) TT without lymph node dissection was done in 46 pts; c) palliative surgery for locally advanced cancer in 9 pts.

Results: At the time of diagnosis 41% of patients had enlarged lymph nodes in the neck, either palpable or visible on ultrasound. In the group of 181 patients where elective lymph node dissections were performed lymph node metastases were found in 130 (71.8%) patients. Out of these 116 pts, were presented with metastases in lower jugular nodes, on frozen-section, so modified radical neck dissection (MRND) was performed in the same act. In the group of patients without elective lymph node dissection (46), relapse occurred significantly earlier in 19 years follow-up ($p = 0.016$).

Discussion: The impact of lymph node metastases on survival rate in PTC is still controversial. Otherwise, lymph node metastases strongly influenced the earlier occurrence of relapse. Approximately 33% to 45% of patients with papillary thyroid cancer has cervical lymph nodes involved at the time of diagnosis. In studies where more extensive surgery with elective lymph node dissections were performed, the incidence of micrometastases in lymph nodes increases up to 80%. In our series the incidence of suspected lymph node involvement at the time of diagnosis was 41%. In the group of patients with elective lymph node dissection the incidence of metastases on definitive histopathology was 71.8%.

Conclusion: Extensive surgery, TT with dissection of central and lower jugular lymph nodes for frozen-section histology, in PTC enables diagnosis of nonpalpable lymph node metastases, precise surgical staging of disease and possible cure in patients with PTC. According to our data, this approach decreases the relapse rate in PTC.

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Thyroid cancer associated with Hashimoto thyroiditis

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The increased incidence of thyroid carcinoma (TC) in patients with Hashimoto's thyroiditis (HT) is well established in the literature, but the previous investigations were based mainly on pathohistological findings and only scintigraphic "cold" nodules were suspected as possible TC.

In our study ultrasound (US) and US guided fine needle aspiration biopsy (FNAB) were performed.

HT was diagnosed in 945 patients (pts) and in 36 of them TC associated with HT was found. TC appeared in 30 cases as hypoechoic nodule, in 4 cases as isoechoic, in 1 pt as cystic nodule and in 1 as calcified nodule. The size of carcinoma was < 1 cm in diameter in 16 cases, 1–2 cm in 11 and > 2 cm in 9 cases. Intraglandular dissemination and/or neck lymph nodes metastases were present in 19% of pts, and in the case of small carcinomas (< 1 cm) in 37% of pts. All pts with TC underwent total thyroidectomy because of cytological finding. Papillary carcinoma amounted to 32 cases, follicular to 3 and medullary to 1 case. In all cases HT was confirmed histologically and pts with perineoplastic and nonspecific thyroiditis were excluded.

Conclusions: 1.) We recommend careful US follow-up examinations of pts with HT. 2.) US-guided FNAB has to be performed in all patients with nodular form of HT (especially if the nodules are echographically displayed as hypoechoic). 3.) Small nodules (< 1 cm) must not be neglected because they also tend to metastasize locally.

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Fine-needle aspiration cytology and frozen-section examination in pre- and intraoperative diagnosis of thyroid cancer

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Introduction: In contrast to thyroid nodules thyroid cancer is a rare condition which, in any case, requires an early diagnosis and treatment. In patients with nontoxic solitary thyroid nodules (NSTN) both fine-needle aspiration cytology (FNAC) and intraoperative frozen-section examination (IFSE) are usually requested for the adequate surgical planning. The aim of this study