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Simultaneous occurrence of Medullary and Papillary Thyroid micro-carcinomas

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Papillary Thyroid micro carcinoma has been demonstrated to present in association with Medullary Thyroid Carcinoma, however, the coexistence of Medullary Thyroid Carcinoma and papillary Thyroid carcinoma represent a very rare entity. In recent years, this rarity has been increasingly observed. The pathogenesis is still controversial. Genetic analysis of RET proto-oncogenes in cases of simultaneous papillary Thyroid carcinoma and Medullary Thyroid Carcinoma has so far provided conflicting results. Our presentation describes rare cases of simultaneous Medullary Thyroid Carcinoma and papillary Thyroid micro carcinoma. These cases were presented in our clinic with unique features and with different ethnicities. Database and literature review will be presented. Our data supports the coexistence of papillary Thyroid micro-carcinoma and Medullary Thyroid Carcinoma. Endocrinologists and pathologists should be aware of this entity. Small Thyroid nodules should be evaluated preoperatively especially if they are located in the contra lateral Thyroid lobe. The pathologist can play a pivotal role in identifying papillary Thyroid micro carcinoma in concurrent existence with Medullary Thyroid Carcinoma.

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Morphological and clinical presentation of Papillary Thyroid Carcinoma in children and adolescents of Belarus: The influence of radiation exposure and the source of irradiation

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Background: The results of international and local ultrasound screening programs aftermath the Chernobyl accident (1990-2005) had shown high variations of Thyroid cancer prevalence among children: 0.2%-0.6% in Gomel, 0.3% in Brest, and 0.008% in Mogilev Oblasts of Belarus.

Aim: The aim of this study was to evaluate the pathological and clinical characteristics of radiation induced Papillary Thyroid Carcinoma (PTC) in childhood population.

Patients & Methods: The pathological and clinical characteristics were investigated in 1078 children and adolescents with PTC who were surgically treated during the years 1990 through 2005. Ultrasonic particularities of Thyroid carcinoma in children exposed to radio-nuclides could be characterized as following: presentation into nodular – 95% and diffuse forms - 5%. The tumors mostly are visualized as a hypo-echogenic node - 56% with irregular margins -76%. Cervix lymph nodes were visualized in 42% cases.

Results: According to the morphological data pediatric patients had high rates of metastatic PTC at presentation (73.8% - lymph nodes involvement, 11.1% distant spread). The overall survival was 96.9% with a median follow-up of 16.21 years, and 20-year event-free survival and relapse-free survival were 87.8% and 92.3% respectively. Patients had significantly lower probability of both loco-regional ($P<0.001$) and distant relapses ($P<0.005$) after total Thyroidectomy and radioactive iodine therapy. The prevalence of SPM in this unique cohort was 1%.

Conclusion: Our investigation had shown that the incidence rates of pediatric Thyroid cancer in Belarus is related to levels of radiation exposure, Thyroid cancer screening, iodine deficiency and nitrates concentration in groundwater.

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