

Abstract:

Thyroid nodules represent a very common pathology. Using modern high-resolution ultrasound, nodules could be found in up to 68 % of patients. The most important task is the diagnosis of thyroid cancer which represents only about 5-15 % of nodules, however the incidence is still growing. Even with the use of a fine needle aspiration biopsy, it is not always possible to decide on the biological nature of the nodule. A significant proportion of such patients have to undergo thyroid surgery for diagnostic reason. Thyroid surgery is associated with risks to the patient and financial costs to the health-care system. In recent decades, the efforts to improve non-invasive diagnostics of thyroid nodules have been made. The thyroid elastography and thyroid autoimmunity are among the examined risk parameters.

Using real-time strain elastography, thyroid carcinomas elasticity has been significantly reduced compared to benign thyroid nodules in our group of patients. The elastography of thyroid nodules can be used as a suitable complement to conventional sonographic examination. In our work, the combination of both methods (conventional ultrasound and elastography) increased the negative predictive value compared to both methods individually. The results of our work further indicate that, in case of absence of normal thyroid parenchyma, the surrounding cervical muscles or the content of the carotid artery can be used as an alternative reference region for assessment of strain ratio.

The positivity of antithyroid antibodies (against thyroperoxidase or thyroglobulin) was significantly associated with the thyroid cancer. Using multiple logistic regression, the positivity of the anti-thyroperoxidase antibodies were identified as an independent risk factor for thyroid cancer. On the contrary, the spontaneous suppression of TSH below 0.5 mIU/l was a protective factor.