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Diagnostic aspects of multinodular goitre

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Multinodular goitre is a common thyroid disorder in some parts of the world. Besides various degrees of neck disfigurement, resulting in cosmetic discomfort, the symptoms are related to compression of the trachea or oesophagus. However, in patients with goitre there is a poor correlation between the thyroid size and the complaints of the patient. Unfortunately, the goitre growth rate is impossible to predict in the individual patient.

When facing a patient with a nodular goitre several factors have to be taken into account. Besides a clinical examination, the diagnostic setup includes thyroid imaging (ultrasound and/or scintigraphy), thyroid function test (primarily serum TSH), serum calcitonin (a marker of medullary thyroid cancer), and fine needle biopsy. CT/MR scan (including tracheal imaging) and a lung function test may be indicated in selected cases. A clinical diagnosis may be difficult but with ultrasound a precise assessment of the thyroid size and morphology is easy. Thyroid scintigraphy is very helpful to evaluate the functionality of the nodules, and it is extremely uncommon that a scintigraphically active nodule is malignant. A subnormal TSH, found in 10-20% of patients with goitre, reflects that mild hyperthyroidism co-exists due to autonomously functioning nodules. Although being asymptomatic in most cases treatment is often advocated due to the risk of heart arrhythmias and osteoporosis. Particularly in patients having an intrathoracic extension of the goitre a significant upper airway obstruction may exist, although being asymptomatic in many cases.

Of crucial importance is that malignancy should be considered in every patient harbouring a thyroid nodule. Findings like vocal cord paralysis, phrenic nerve paralysis, Horner's syndrome, local lymphadenopathy, or a progressive tracheal compression clearly point at thyroid malignancy, but most often there is no clinical suspicion. The sonographic image of benign and malignant thyroid nodules may look very similar. Consequently, fine needle biopsy is an important tool at most centres, but microcarcinomas may be overlooked. It is controversial whether measurement of serum calcitonin is worthwhile.

The majority of patients with small or moderately-sized goitre have few or even no clinical symptoms. Whether treatment should be offered is highly depended on the patient's discomfort due to the goitre. In addition, issues like the thyroid size, the age of the patient, coexisting diseases, impact on the trachea, and the thyroid function are all important when making a therapeutic strategy.

References

1. Hegedüs L, Bonnema SJ, Bennedbæk FN. Management of simple nodular goiter: current status and future perspectives. Endocrine Reviews 2003; 24(1):102-132.