

Prof Carsten Palme

Thyroid Nodular Disease

Thyroid nodules are common in the general community. They are present on clinical examination in approximately 5 % of patients. The incidence of subclinical disease however is much higher due to the widespread use of imaging when evaluating a variety of head and neck complaints. Thyroid nodular disease is most common in women with a ratio of greater than 3:1. Nearly 50 % over the age of 50 years will have detectable nodules on high resolution ultrasonography. The aetiology is varied and commonly includes iodine deficiency, immune disorders, and both benign and malignant neoplasms. The incidence of primary malignancy in clinically detectable thyroid nodules is 5% to 20 %. The majority of thyroid cancers are well differentiated and foremost include papillary (80 %) and follicular (10 %) variants. The death rate of thyroid cancer is fortunately very low and associated with more aggressive histologic subtypes including medullary and anaplastic carcinoma.

The high incidence of both clinically and importantly incidentally discovered thyroid nodules place a significant burden on the primary care physician. A clear and robust approach is required to identify those patients which require prompt specialist care. A concise history and comprehensive examination is paramount in the assessment of all thyroid nodules. It is important to identify risk factors for malignancy such as extremes of age, gender, ionizing radiation exposure and a positive family history. A rapidly growing nodule, associated with lateral neck lymphadenopathy and or changes in airway, voice and swallow are clinical features that are highly associated with an underlying thyroid cancer. In addition to careful physical examination of the neck, all patients require thorough inspection of the upper aerodigestive tract. This can be achieved with the use of laryngeal mirrors, rigid endoscopes or fiberoptic flexible nasendoscopes.

Fortunately the majority of patients do not have signs of significant local invasion or metastatic disease on presentation. It is therefore standard of care to perform routine investigations in all patients which include simple thyroid function tests, evaluation of thyroid autoantibodies and importantly high resolution ultrasonography. There are certain imaging features such as size, the presence of microcalcification (present in papillary carcinoma), irregular tumor borders and increased vascularity that may heighten concerns of an underlying thyroid cancer. The gold standard investigation for a thyroid nodule greater than 1 - 1.5 cm is an ultrasound guided fine needle aspiration biopsy (FNA) by an experienced cytopathologist. Standard reporting of the cytology includes; malignant or suspicious, benign, atypical, indeterminate or inadequate sample.

The management of thyroid nodular disease requires a multidisciplinary approach. The team includes foremost the primary care physician, the endocrinologist, an experienced head & neck surgeon, a thyroid cytopathologist and radiologist with an interest in neck ultrasonography. Treatment depends on a combination of patient, tumor and investigational factors. Patients who present with a malignant or atypical FNA are treated with surgery which may include a total or partial thyroidectomy depending on the clinical setting. Benign FNAs can be managed with repeat imaging and or biopsy. Inadequate or indeterminate FNAs should be repeated.

In summary the management of thyroid nodular disease represents a major challenge given the significant incidence in the general community and the possibility for a malignant aetiology. A successful outcome requires a clear understanding of certain patient, tumor and investigational risk factors. The standard approach consists of a comprehensive history and physical examination, appropriate investigations and a multidisciplinary team. Definitive treatment includes close observation or surgical exploration.

References

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Prof Palme treats both adult and paediatric ENT disorders and has particular interest and expertise in thyroid and parathyroid surgery, salivary gland disorders and tumors, advanced skin cancer and all aspects of head and neck cancer.

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