The Surgeon’s Perspective of Thyroid Disease

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Benign thyroid disease and especially thyroid nodules are a common clinical problem. In about 5% to 10% of individuals with thyroid diseases, thyroid carcinoma is diagnosed by fine-needle aspiration cytology (FNA), during or after thyroid surgery. The incidence of differentiated and mostly papillary thyroid cancer is continuously increasing in the US and other European countries such as Germany. Risk factors for thyroid malignancies are: childhood neck irradiation or exposure to nuclear fallout and a positive family history of papillary (FNMT) or medullary thyroid carcinoma (FMTC or MEN syndrome).

When thyroid nodules are discovered, an examination of the thyroid gland and cervical lymph nodes should be performed. Thyroid ultrasound helps to discriminate between benign and suspicious thyroid nodules and cervical lymph nodes. Suspicious nodules should be further evaluated by FNA. Calcitonin screening may detect medullary thyroid carcinoma or C-cell hyperplasia. Calcitonin levels above 10 pg/ml should be followed by Pentagastrin testing.

Thyroid surgery is recommended for the following conditions:
- large non-toxic thyroid goiters with local signs of compression
- thyroid nodules causing hoarseness or a paresis of the recurrent laryngeal nerve
- suspicious thyroid nodules detected by ultrasound
- thyroid nodules in children and adolescents
- recurrent symptomatic thyroid cysts
- FNA diagnosis of follicular or Hurthle cell neoplasia
- FNA diagnosis of papillary thyroid carcinoma
- elevated basal and stimulated calcitonin levels (Pentagastrin test > 100 pg/ml).

Surgical procedures of benign thyroid diseases include limited resections such as subtotal resections or lobectomies for solitary nodules or near-total respective total thyroidectomy for bilateral thyroid nodules, large thyroid goiters or thyroid carcinomas. Only for solitary papillary microcarcinomas, a procedure less than total thyroidectomy seems appropriate. For patients with a history of radiation exposure or a family history of thyroid cancer, total thyroidectomy is recommended, too.

Radioiodine ablation is suggested for hot nodules, individuals with an increased risk for surgical procedures and general anaesthesia and patients refusing surgery.