APPROACH TO THYROID SWELLING

GOITRE

DIFFUSE

NODULAR

EUTHYROID

HYPOTHYROID

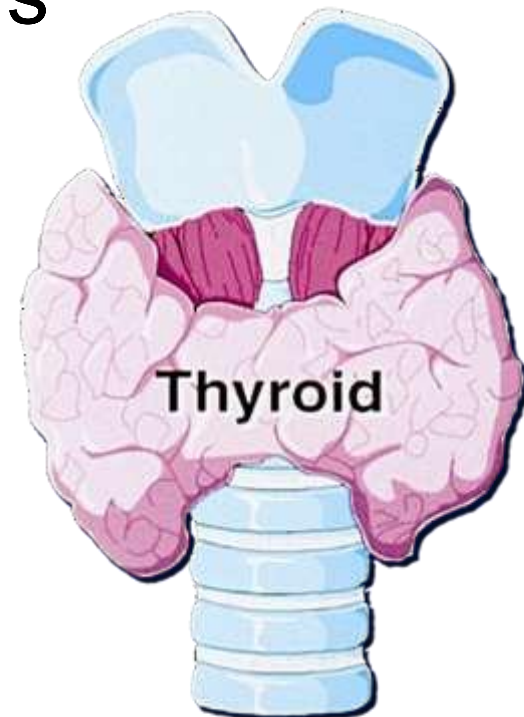
HYPERTHYROID

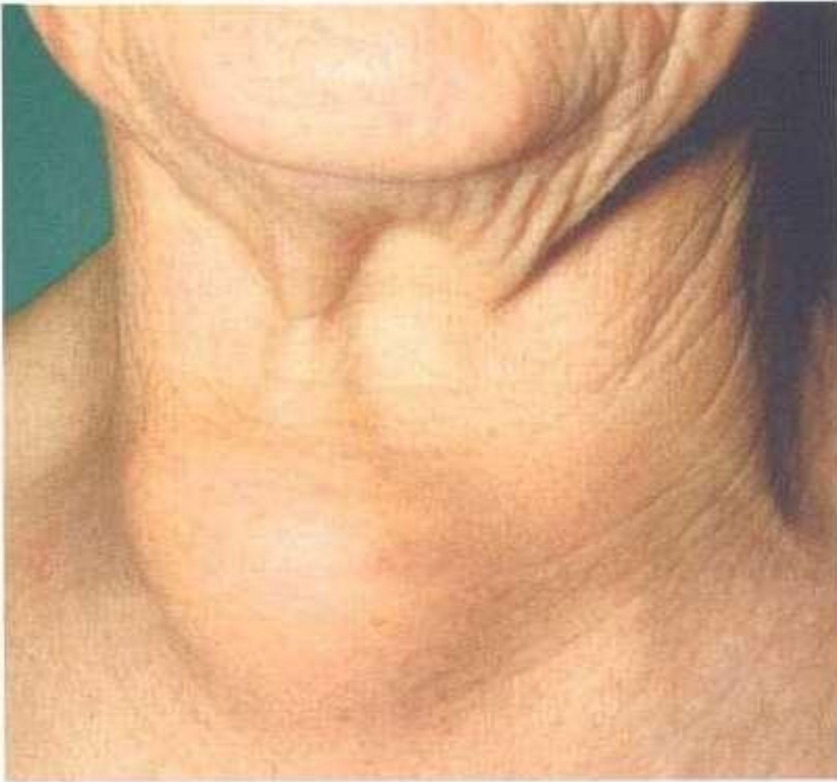
TYPES:

Simple goitre (euthyroid)	• Diffuse hyperplastic • multinodular
Toxic	• Diffuse (Graves disease) • multinodular
Neoplastic	• Benign • malignant

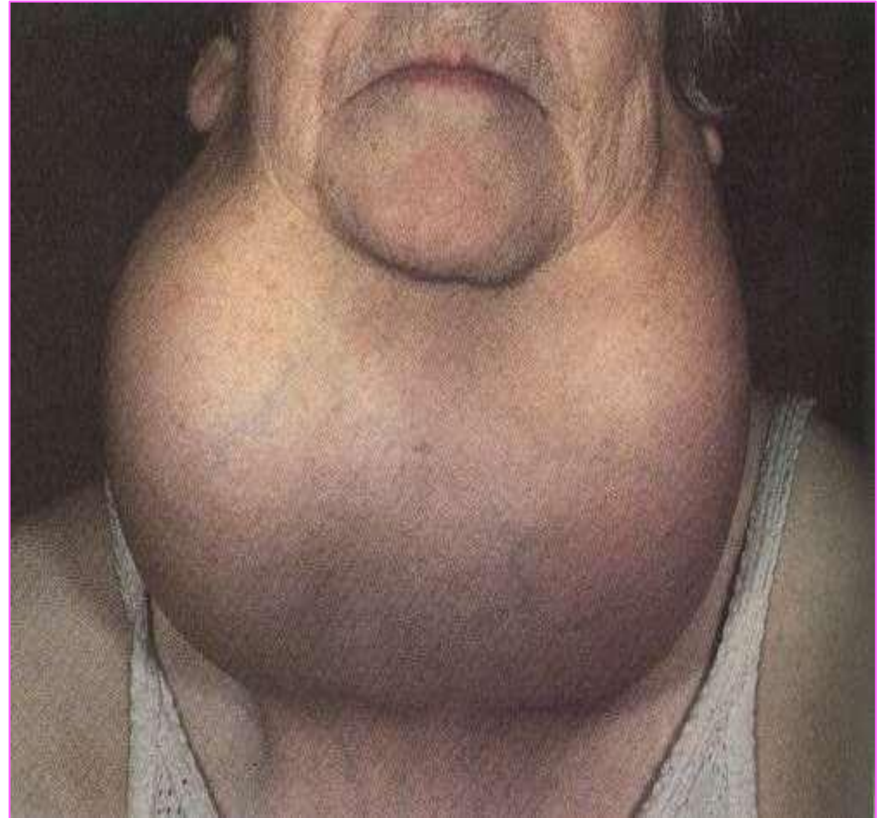
THYROID ENLARGEMENT DUE TO INFLAMMATORY CAUSE:

- Autoimmune: chronic lymphocytic thyroiditis, hashimoto’s throiditis
- Granulomatous: de quervain’s thyroiditis
- Fibrosing: riedels’ thyroidits
- Infective
- others





SOLITARY NODULAR GOITRE



DIFFUSE THYROID ENLARGEMENT

MULTINODULAR GOITRE:

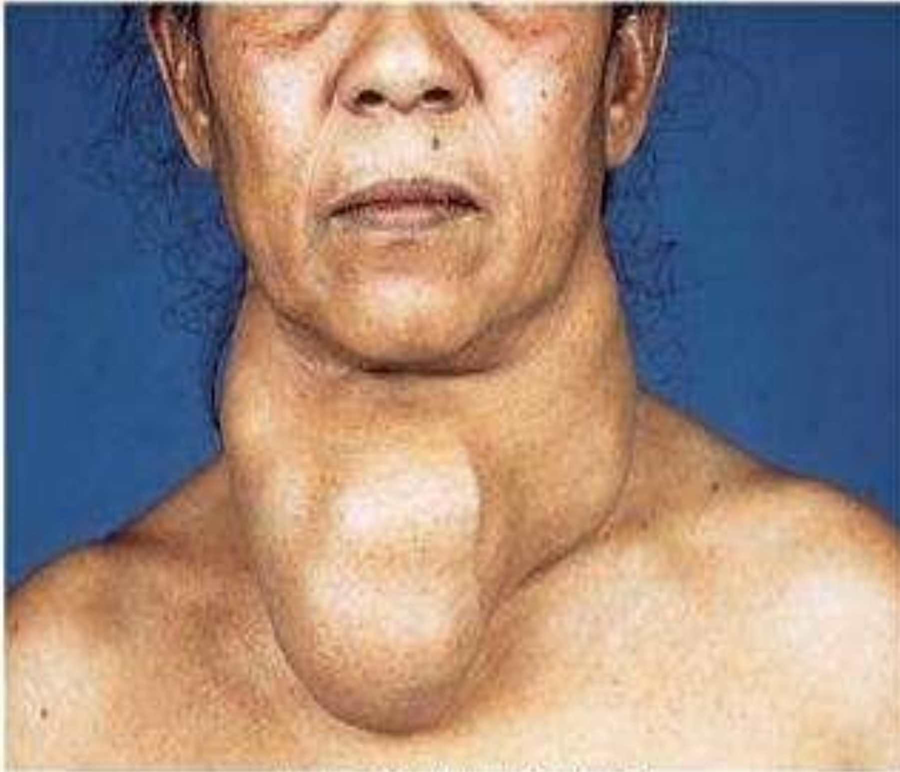


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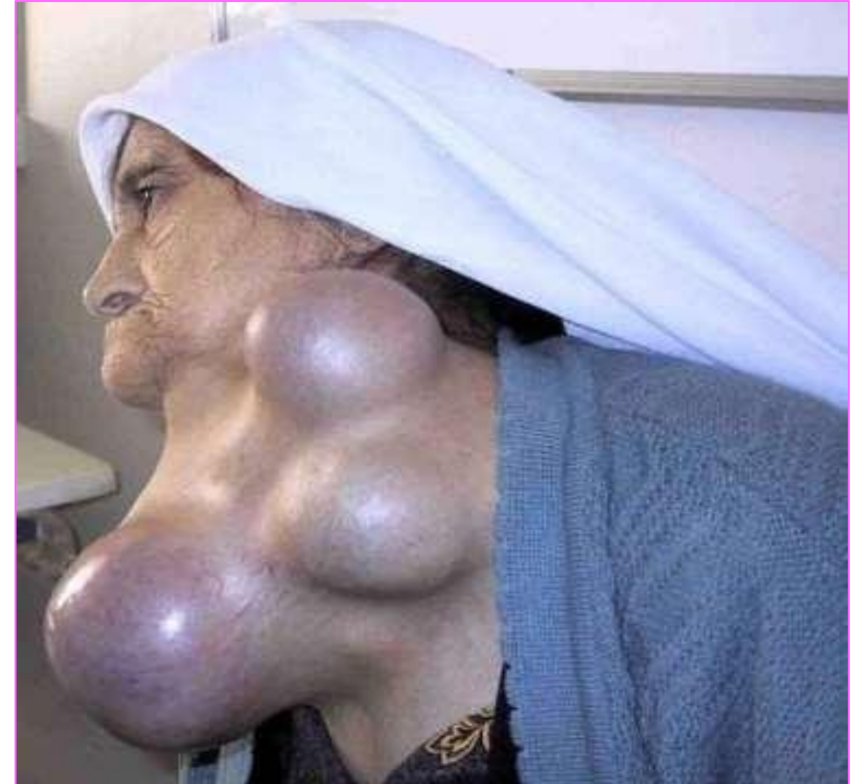
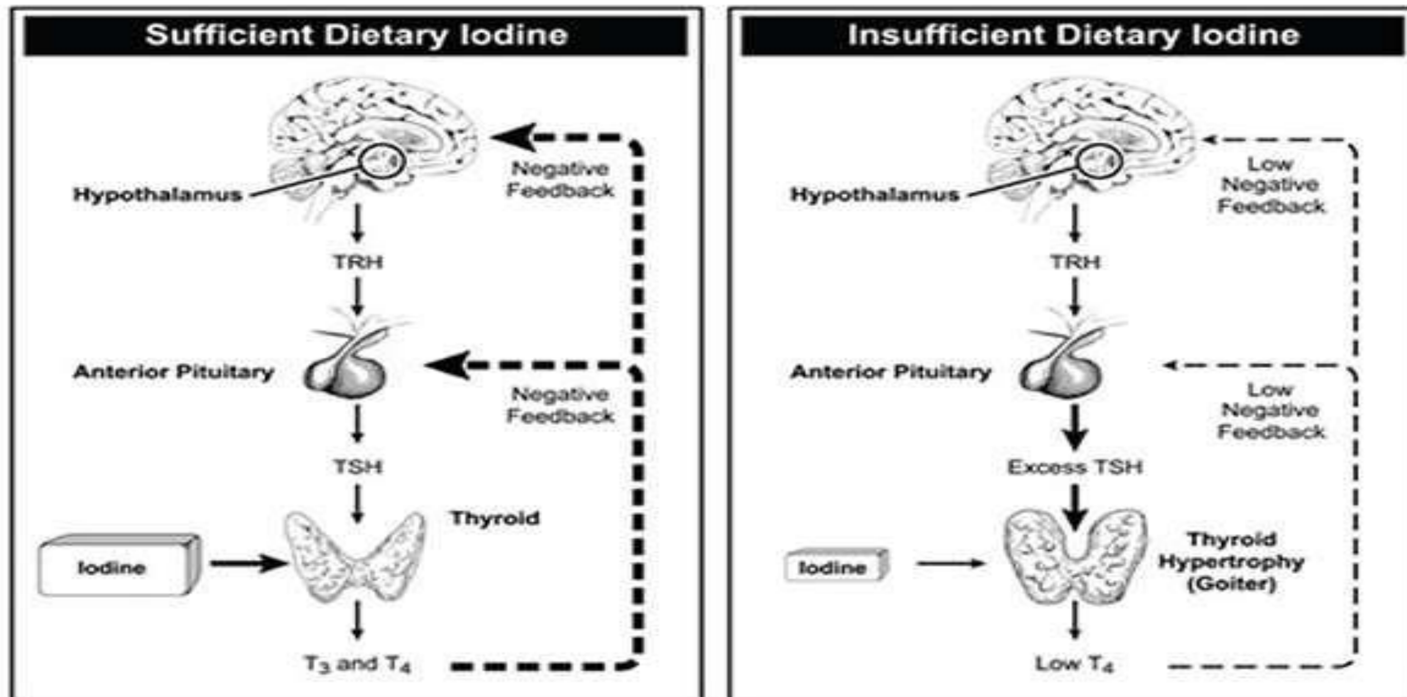
Figure 12.8 A large multinodular goitre. Note the asymmetrical growth of the nodules.



CAUSES:

- Iodine deficiency
- Dyshormonogenesis
- Goitrogens

Figure 2. The Hypothalamic-Pituitary-Thyroid Axis



In response to thyrotropin-releasing hormone (TRH) secretion by the hypothalamus, the pituitary gland secretes thyroid-stimulating hormone (TSH). TSH stimulates iodine trapping and thyroid hormone synthesis by the thyroid gland and the release of T_3 (triiodothyronine) and T_4 (thyroxine) into the circulation.

When dietary iodine intake is sufficient, the presence of adequate serum T_4 and T_3 concentrations feeds back at the level of both the hypothalamus and pituitary gland, decreasing TRH and TSH production.

When circulating T_4 concentrations decrease, the pituitary gland increases its secretion of TSH, stimulating iodine trapping and production and release of both T_3 and T_4. In the case of iodine deficiency, persistently elevated TSH levels may lead to hypertrophy of the thyroid gland, also known as goiter.

PATHOGENESIS

Diiffuse hyperplasia of all lobules composed of active follicles and uniform iodine uptake

Fluctuating stimulation..

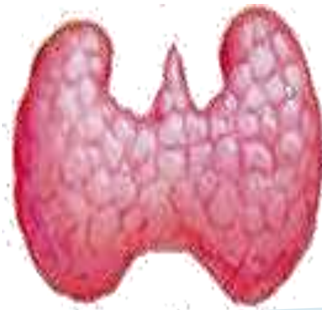
Areas of active and inactive lobules

Active lobules more vascular and hyperplastic

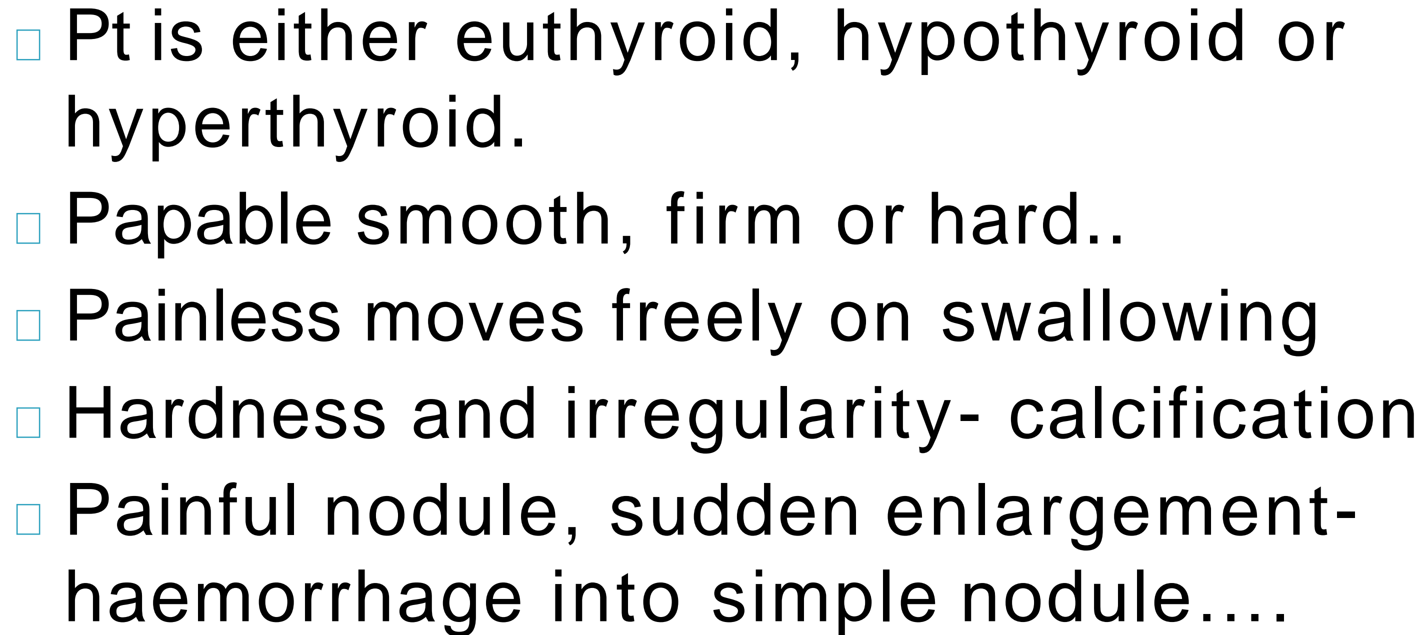
Cont.,

Most nodules inactive. Active follicles only in internodular tissue.

Approach to solitary nodular goitre

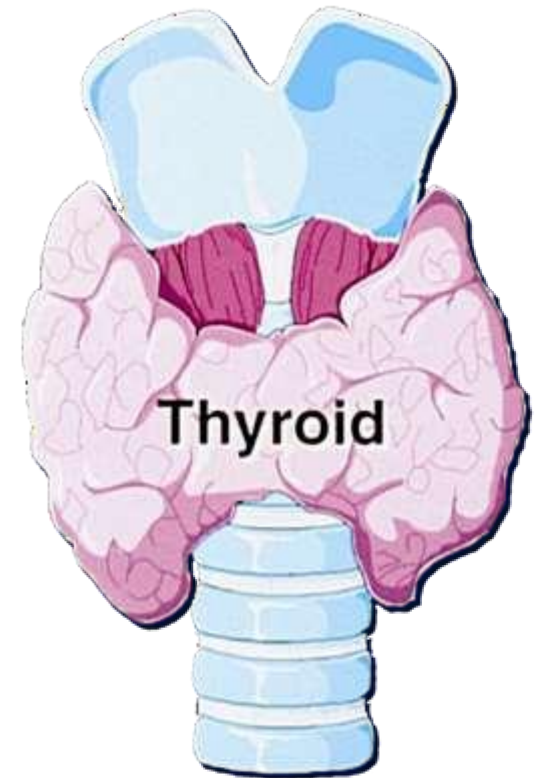


CLINICAL FEATURES:



Clinically discrete swelling

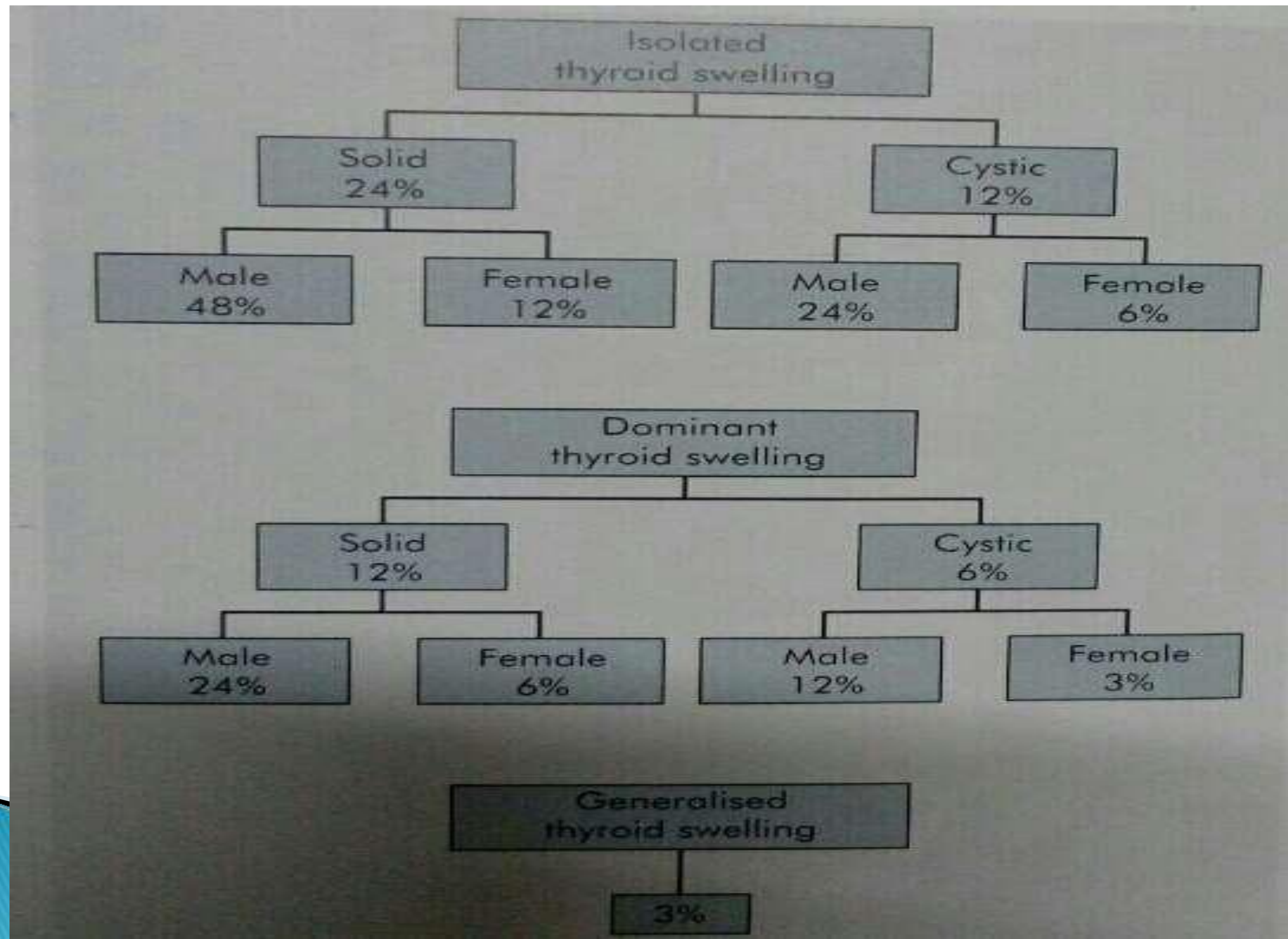
- Isolated or solitary(70%)
- Dominant (30%)



COMPLICATION

- SECONDARY THYROTOXICOSIS
- PRESSURE SYMPTOMS
- CARCINOMA (follicular)

Risk of malignancy in thyroid swelling



Investigation

THROID FUNCTION

- SERUM TSH
- Free t3 and t4

ULTRA SONOGRAPHY

- Subclinical nodularity, cyst
- Microcalcification, inc vascularity, nodal involvement

FNAC

- Colloid nodules, thyroiditis, papillary,
- Medullary, anaplastic carcinoma , lymphoma

CLASSIFICATION OF FNAC REPORT:

Thy1	Non-diagnostic
Thy1c	Non-diagnostic cystic
Thy2	Non-neoplastic
Thy3	Follicular
Thy4	Suspicious of malignancy
Thy5	Malignant

AUTOANTIBODY TITRE

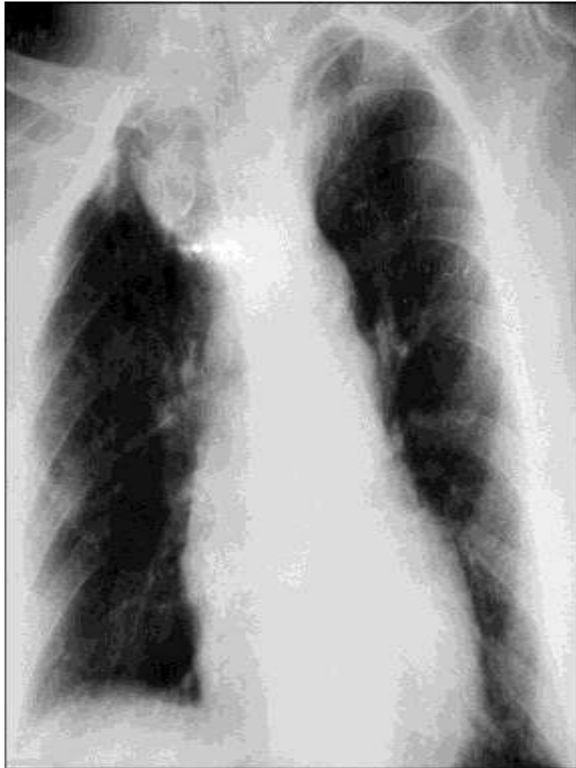
- Hashimotos
- Chronic lymphocytic thyroiditis

ISOTOPE SCAN

- TOXICITY+ NODULARITY
- Hot, warm, cold nodule

OTHERS

- Chest radiograph, CT, MRI
- Laryngoscopy, core biopsy



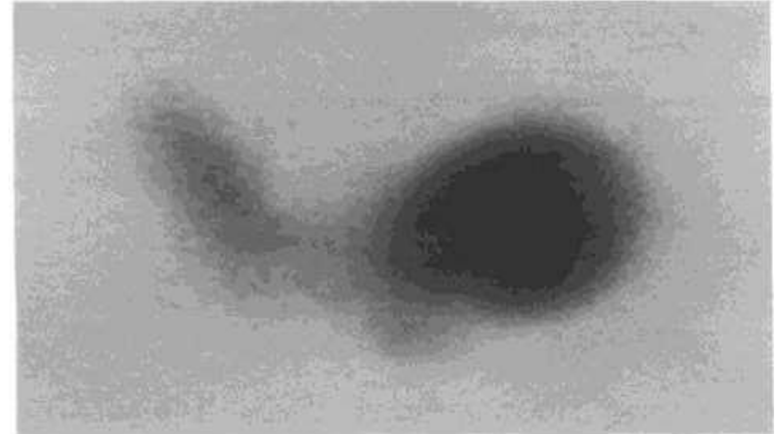
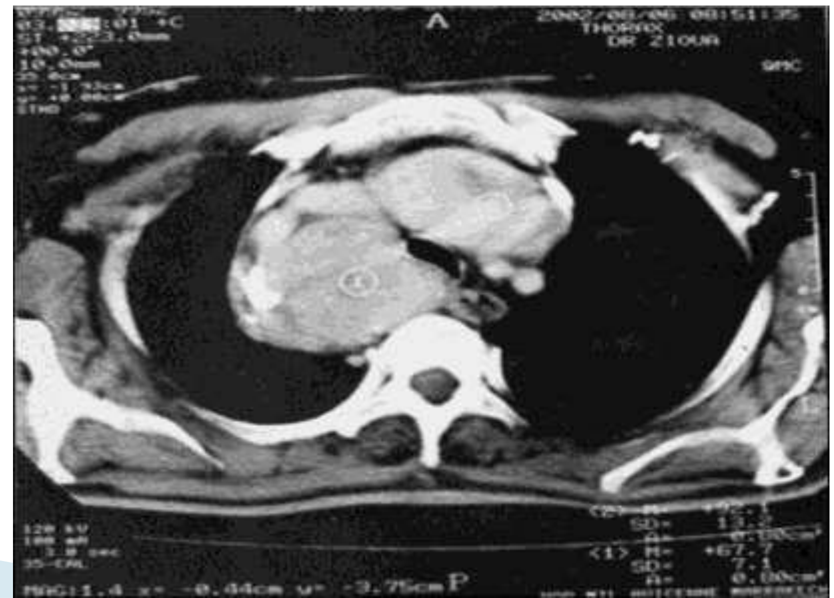


Figure 34.7 'Hot' nodule on thyroid isotope scan.



TREATMENT: SOLITARY NODULAR GOITRE: (EUTHYROID)

- Indication: Risk of neoplasia (FNAC Thy 3-5)
  Symptomatic swelling (age & sex)
  Pressure symptoms. (hoarseness of voice)
  Lymphadenopathy
  Recurrent cyst
  Cosmesis

Dominant nodule of multinodular goitre

Subtotal thyroidectomy.. (inc chances of recurrence)

Prefer total thyroidectomy (also for FNAC thy 3-5)

SOLITARY NODULAR GOITRE:

HEMI THYRIDECTOMY

BIOPSY- FOLLICULAR CARCINOMA

TOTAL/COMPLETION THYROIDECTOMY

RETROSTERNAL GOITRE:

- Extension of lower pole of nodular goitre
- Rare – from ectopic thyroid tissue.
- TYPES: substernal, plunging, intrathoracic
- SYMPTOMS:
- Dyspnoea with cough & stridor
- Dysphagia
- Engorgement of facial, neck & sup chest wall veins. (SVC obstruction) pemberton sign +

Cont.,

- INVESTIGATION:
- CHEST XRAY: - superior mediastinal shadow
  -Deviation, compression of trachea

DIAGNOSTIC: CT SCAN
Flow volume loop pulmonary function test
TREATMENT: total thyroidectomy sometimes by median sternotomy approach

THANK YOU

External carotid artery
Internal carotid artery
Superior thyroid artery and vein
Superior laryngeal artery
Thyrohyoid membrane
Ansa cervicalis { Superior root
Inferior root
Common carotid artery
Internal jugular vein
Middle thyroid vein
Inferior thyroid veins
Ascending cervical artery
Inferior thyroid artery
Transverse cervical artery
Suprascapular artery
Thyrocervical trunk
Subclavian artery and vein
Vagus nerve (X)
Right recurrent laryngeal nerve
Brachiocephalic trunk
Brachiocephalic veins
Superior vena cava
Aortic arch
Hyoid bone
Superior laryngeal nerve
Internal branch
External branch
Thyroid cartilage (lamina)
Median cricothyroid ligament
Cricothyroid muscles
Cricoid cartilage
Pyramidal lobe (often absent or small)
Right lobe
Left lobe
Isthmus
} Thyroid gland
Pretracheal lymph nodes
Phrenic nerve
Anterior scalene muscle
Vagus nerve (X)
External jugular vein
Anterior jugular vein
1st rib (*cut*)
Left recurrent laryngeal nerve