

Clinical examination of Thyroid



Inspection

- Routine
- Pizzilolo's Method



Palpation

- Crile's Method :Standard method of examination from Behind
- Lahey's Method : usefull for small nodules



Thyroid examination

Special test

- Kocher's Test
- Beri's Sign
- Pemberton's Sign



Clinical Goitre

- Goiter is any swelling of Thyroid
- Clinically two types of goiter
- Diffuse or Nodular
- Involving one lobe or both the lobes
- If nodular
 - Solitary thyroid nodule
 - Multi nodular



Thyroid function status

- All clinical types of conditions whether diffuse or nodular, solitary thyroid nodule or multinodular goiter ,whether benign or malignant, inflammatory can exist functionally as
 - Euthyroid
 - Hyperthyroid
 - Hypothyroid



ENDEMIC CRETINISM

- Intra uterine source of iodine
- 1st TRIMESTER : MATERNAL T 4
- 2nd TRIMESTER : DIETARY IODINE
- Thyroxin is essential for neurological development.
- Deficiency will lead ➤ NEUROGENIC FORM OF CRETINISM
- Impairment of Neurological development

Mental retardation, Spastic gait
Hearing defect, Stunted growth

NEURO-CRETINISM IS NOT CURABLE
BUT
ENTIRELY PREVENTABLE

Aetiology of simple Goiter

- **Iodine Deficiency**
 - Absolute
 - Relative : physiological
- **Defect in synthesis of thyroid hormone.**
 - Enzyme deficiency
 - Goitrogens



Iodine Deficiency

- Daily requirement 100-125 mg
- Relative : physiological
- Absolute
 - Endemic - Geochemical deficiency
- Sporoidic
- calcium. Chalk and stone areas
- Increase calcium content in water
- Abnormal intake of fluorine
- E.Coli position of water

Defect in synthesis of thyroid hormone.

- Enzyme deficiency

Responsible for sporadic cases in non endemic areas

- Pendred syndrome – Peroxidase deficiency
- Dehalogenase deficiency

- Goitrogens



GOITROGENS

- GROUP I :

- Cynides and Cynates
- Competitive inhibition of Iodine
- Reversible with large intake of Iodine

GROUP II

- Sulphur containing drugs
- sulfonamides and thiourea

NONCOMPETITIVE INHIBITION OF IODINE

Action prevented by Thyroxin not by Iodine

Goitrogen may aggravate environmental iodine deficiency

- Zaire Lake Kiwu and Island of Idjiwi
- Staple food is Casava
- Cyno-glucoside \longrightarrow Thiocynate
- Western sudan
- Staple food Millet
- Goiter only in Rural area

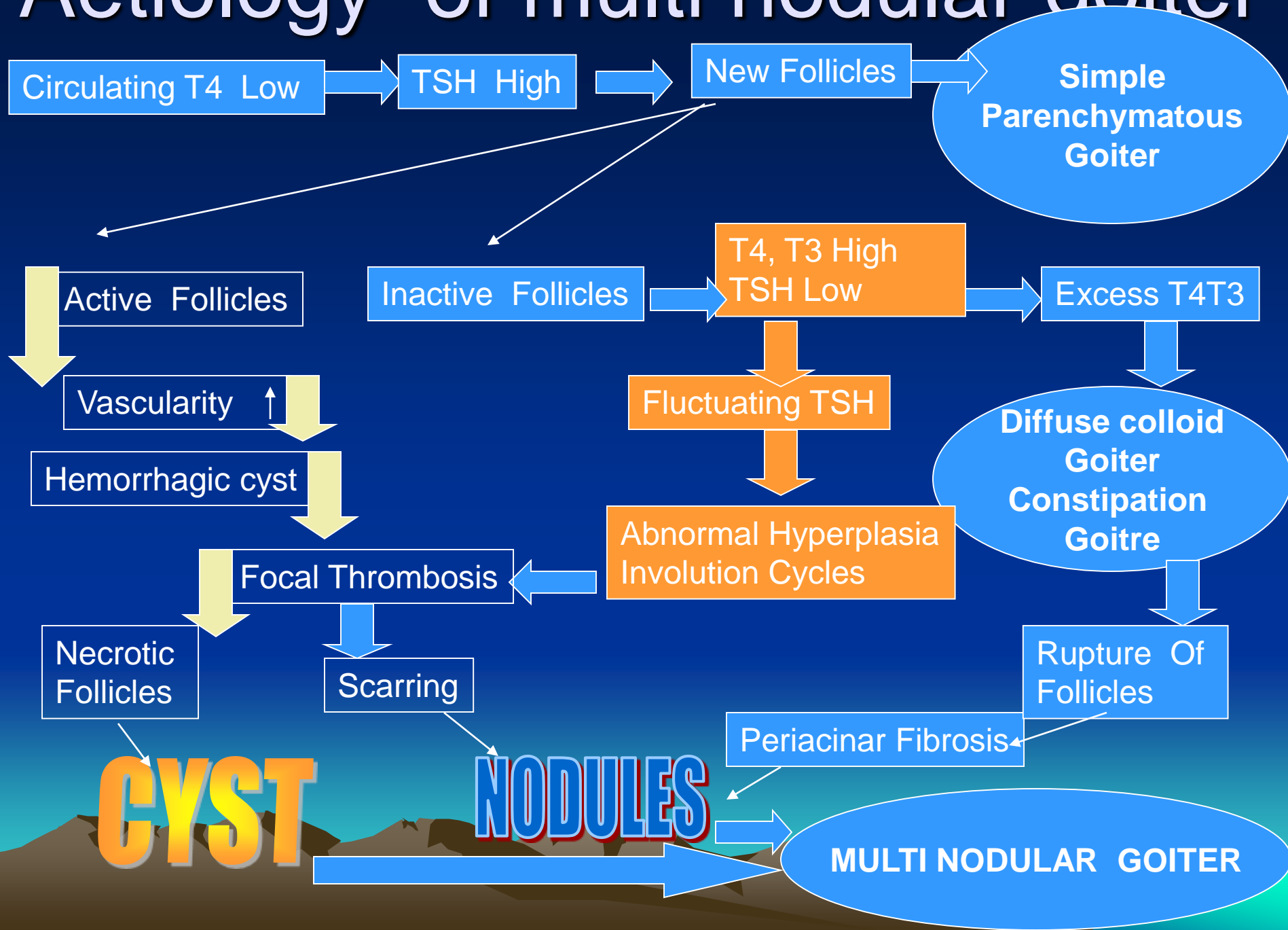


Natural history of Simple goiter

- Stage of Simple parenchymatous Goiter
- Stage of Diffuse Colloid Goiter
- Stage of Multi nodular goiter
- Stage of Complications



Aetiology of multi nodular goiter



Stage of Complications

- Cystic generation
- Hemorrhage in Cyst
- Toxic Change
- Malignant change
- Tracheomalacia
- Pressure symptoms
 - Dysphagia
 - Dyspnoea
 - Hoarseness of voice
 - dysphonia

IODINE DEFICIENCY GOITER

Clinical presentation

1. Asymptomatic : silent
2. Solitary thyroid nodule : Dominant palpable Nodule in otherwise normal parenchyma
3. Goiter : Enlarged Thyroid Gland with multiple Nodules
- 4 Pressure symptoms :
 - Dysphagia, dyspnoea, stridor
 - Husky Voice
 - Complications : cystic degeneration : large size gland
 - Hemorrhage in the cyst : sudden increase in size of swelling
 - Additional features of Thyrotoxicosis, malignancy

MULTI NODULAR GOITRE



SIGNS of MNG

1. Goiter of various sizes depending upon stage and duration of pathology
2. Solitary nodule in thyroid
3. Goiter with multiple nodules
4. Pressure symptoms Kocher's Test
5. See for retrosternal Extension



Investigations

Thyroid function test to declare

- Euthyroid State : T3, T4, and TSH levels Serum Cholesterol and Serum Creatinine
- X ray Neck - Calcification of nodules
- X ray Chest – Mediastinal widening
- ENT examination For Recurrent Laryngeal Nerve Palsy
- I 131 scintiscan in case of solitary nodule or suspicion of malignancy
- USG to find out nodule single or Multiple
- Investigation to rule out retrosternal / intrathoracic extension/

Management

1. Iodine Orally : Lugols Iodine or Crooks Collassol Iodine
2. Thyroxin or Thyroid Extract
3. Surgical Exploration and sub total thyroidectomy

Indication for surgery

1. Multinodular Goiter :cystic degeneration. Hemorrhage in the cyst, sudden increase in the size in ant compartment of neck leading to acute respiratory obstruction
2. Suspicion of malignancy
3. Pressure symptoms
4. Cosmetic reasons
5. Substernal extension

Endemic Goitre

- If the incidence of goitre is $> 10\%$ in a defined geographic area
- Iodine excretion in urine $< 100 \text{ mg /day}$
- Normal thyroid volume on USG
- Male : $12.7 \pm 4.4 \text{ ml}$
- Female : $8.7 \pm 3.9 \text{ ml}$

W.H.O. Grading system

- State 0 : No goiter
- Stage IA Goiter delectable only by palpation and not visible even on full extension of neck
- Stage I B : Palpable and visible
- Stage II : visible with neck in normal position
- Stage III : Very large goiters
recognized at a considerable
distance.