LINGUAL THYROID

DEFINTION

Presence of ectopic thyroid tissue at foramen caecum due to aberrant embryogenesis during the descent of thyroid gland to the neck.

EMBRYOLOGY

Initially thyroid gland appears as proliferation of Endodermal tissue in the floor of the pharynx between Tuberculum impar and Hypobranchial eminence (this area is the later foramen caecum).

Cells of thyroid gland descend into the mesoderm into the hypopharyngeal eminence (later pharynx) as cords of cells. During this descent thyroid tissue retains its communication with foramen cecum. This communication is known as thyroglossal duct. This duct disappears as soon as the descent is complete.

Gland reaches its final distinction by 7th week and begins to function by 3rd month.

EPIDEMIOLOGY

F>M – 4:1, can occur at any age but usually occurs during teenage.

SYMPTOMS

Usually asymptomatic

Can have dysphagia

Dysphonia

Bleeding from mass

Foreign body sensation

Sleep apnoea

Hypothyroidism

Dyspnoea (rarely)

Very rarely can undergo malignant transformation

On Examination – Pinkish mucosa covered mass over the posterior third of tongue. On palpation solid, firm or fixed mass at the level of foramen caecum.

INVESTIGATION

USG neck – to ascertain presence of normal thyroid tissue in neck.

X ray soft tissue neck lateral view – might help to judge the lower extent of mass in neck

Contrast CT – delineates total extent of mass and also shows vascularity of mass

Tc99 scan is diagnostic of Lingual thyroid – Shows uptake of radioactive iodine by the mass. These images are obtained in either dynamic or static mode 20 minutes after intravenous injection of Technitium 99 pertechnetate.

Role of Radioactive Iodine uptake studies – Both I 131 and I 123 can be used for this purpose. I 123 has a favourable dosimetry but expensive.
Radioactive iodine is usually administered in small doses orally and uptake is measured at different intervals i.e. 2 hrs, 4 hrs, 24 hrs and 48 hrs.

- Estimation of serum T3 T4 and TSH levels
- This will help in assessing the functional status of the ectopic gland. Invariably majority of these patients are euthyroid.

**MANAGEMENT**

**CONSERVATIVE:**

- If the lingual thyroid is the only functioning thyroid suppression therapy using regular oral doses of thyroxine can be attempted.
- This is more so in patients whose normal physiological requirement of thyroxine is raised as during periods of active growth, menarche, pregnancy etc. This suppression therapy will help in preventing abnormal physiological enlargement of the ectopic thyroid tissue.

**SURGICAL MANAGEMENT:**

**Indications for surgery:**

1. If the mass produces obstructive symptoms
2. If the mass produces bleeding
3. If the mass demonstrates sudden increase in size
4. If malignancy is suspected

- FNAC is not advised as it would cause unnecessary bleeding. Similarly instead of biopsying the lesion total excision is preferred.
- Methods of excision:

**Transoral method of excision**

- This method of excision is preferred for small lingual thyroid masses. It is ideally suited for lesions which are above the level of hyoid bone. Clinically if the posterior border of the swelling is seen on depressing the tongue with a tongue depressor then one can safely go ahead and remove the mass transorally.

- Advantages of transoral approach:
  1. Easy to perform
  2. Neck incision is avoided
  3. Patient's recovery is rapid
  4. Complications are minimal

**Transmandibular translingual approach** – for very large lingual thyroid masses.

- Preliminary tracheostomy is performed under local anesthesia. General anesthesia is introduced via tracheostome.
- An incision over the mucoperiosteum of the buccogingival sulcus is performed over the interior region of mandible and the bone over the mental area is exposed.
- A midline vertical osteotomy of the mandible is performed.
The tongue is sectioned sagittally in the midline up to the floor of the mouth till the tongue base is reached. The lingual thyroid mass is excised in toto.

The wound is closed in layers. The mandible is immobilized by wiring and dental arch bar.

**ADVANTAGES**

1. Excellent visualization
2. No need for ligating lingual vessels
3. Important structures are spared i.e. lingual nerve, hypoglossal nerve, and submandibular salivary gland

**Lateral pharyngotomy approach**

- This approach is preferred if transpositioning of lingual thyroid is planned.

**Suprathyroid midline approach**

- This approach is preferred in removing large lingual thyroid mass even if it extends to a level below that of hyoid bone.