DEVELOPMENTAL DISTURBANCES

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DEVELOPMENTAL DISTURBANCES OF TONGUE

MICROGLOSSIA (HYPOGLOSSIA)

- abnormally small tongue
- In rare instances, virtually the entire tongue may be missing (aglossia)
- Most cases associated with a group of overlapping conditions known as oromandibular-limb hypogenesis syndromes.
- These syndromes feature associated limb anomalies such as hypodactylia (i.e. absence of digits) and hypomelia (i.e.• hypoplasia of part or all of a limb).

MACROGLOSSIA

- some congenital syndromes often express macroglossia in their phenotypes, most commonly Down syndrome and Beckwith-Wiedemann syndrome (97.5% of patients have macroglossia).
- true macroglossia and pseudomacroglossia.
- Physical examination of the oral cavity and head morphology is helpful to deduce true macroglossia from pseudomacroglossia.
- Check tongue tone and mobility to rule out simple atonia or hypotonia indicating poor posturing of the tongue—as is commonly observed in Down syndrome

CAUSES

- Pseudomacroglossia includes any of the following conditions, which force the tongue to sit in an abnormal position:
- Habitual posturing of the tongue
- Enlarged tonsils and/or adenoids displacing tongue
- Low palate and decreased oral cavity volume displacing tongue
- Severe mandibular deficiency (retrognathism)
- Neoplasms displacing the tongue
- Hypotonia of the tongue

True macroglossia can be subdivided into two main subcategories, congenital causes and acquired causes:

Congenital causes

- Gland hyperplasia
- Hemangioma
- Lymphangioma
- Down syndrome
- Beckwith-Wiedemann syndrome

ACQUIRED CAUSES

Metabolic/endocrine

- Hypothyroidism
- Cretinism
- Diabetes

Infections

- Syphilis
- Tuberculosis

Systemic/medical conditions

- Myxedema
- Acromegaly
- Neurofibromatosis
- Iatrogenic macroglossia

- Traumatic
  - Surgery
  - Hemorrhage
  - Direct trauma (e.g. biting)
    - Intubation injury
  - Radiation therapy

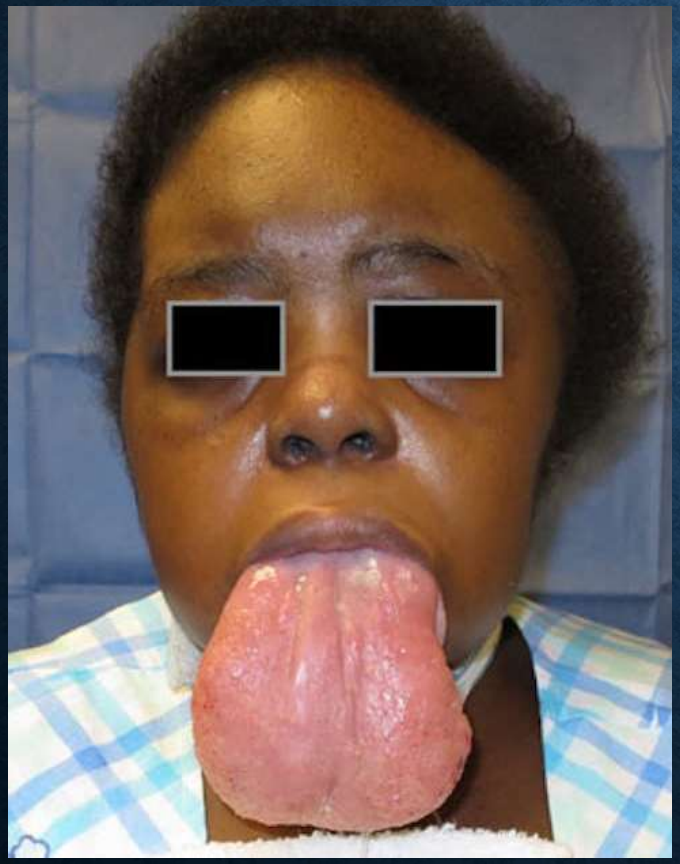
Neoplastic

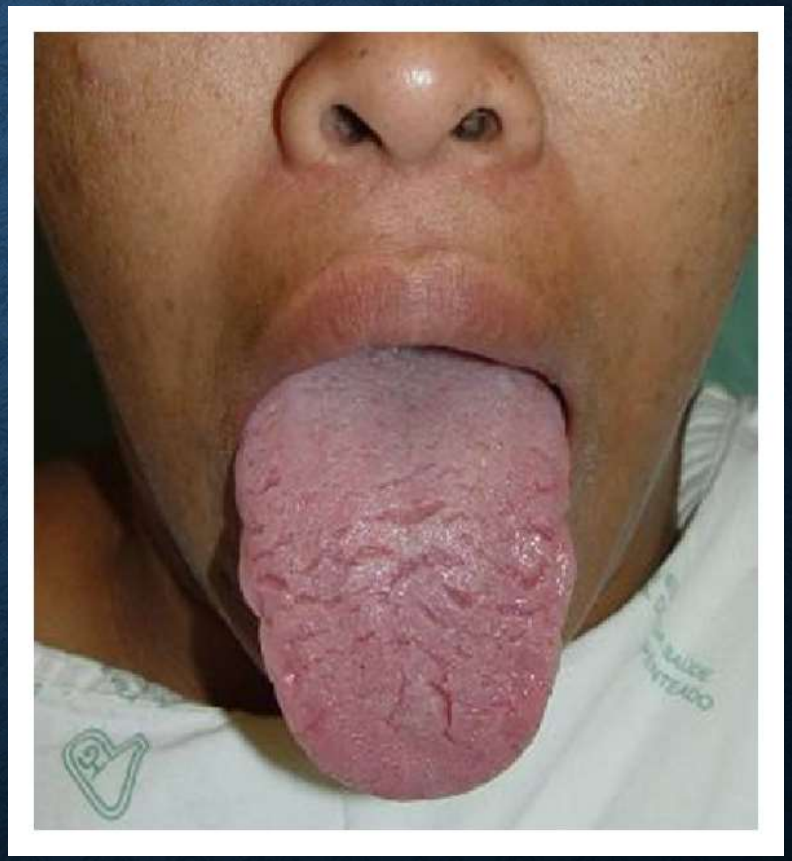
- Lymphangioma
- Hemangioma
- Carcinoma
- Plasmacytoma

Infiltrative

- Amyloidosis
- Sarcoidosis

MACROGLOSSIA





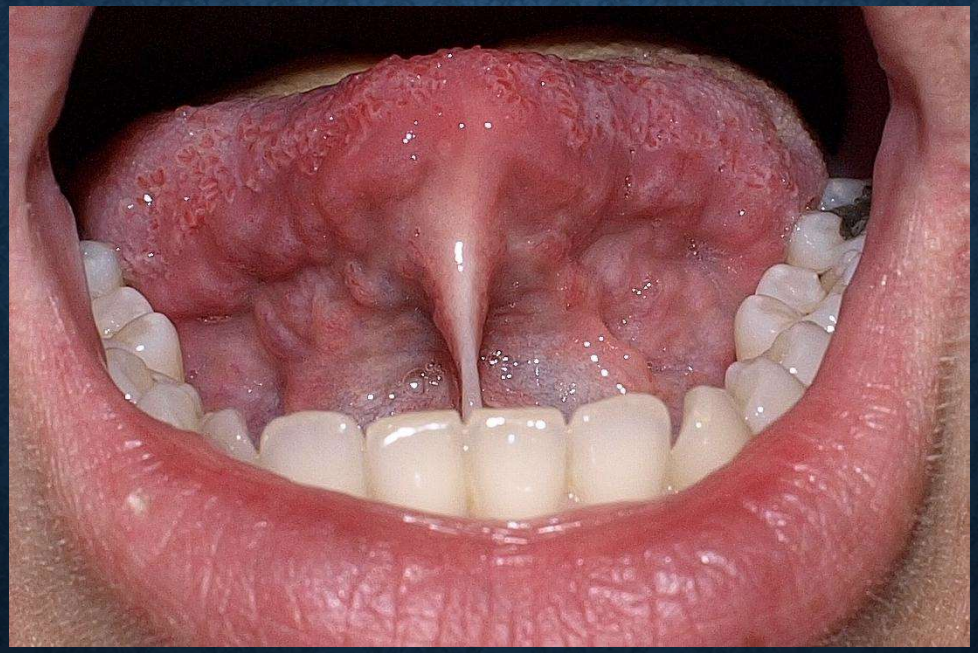
TREATMENT

- The goal is to reduce tongue size and thereby improve function.
- Those main functions include articulation, mastication, deglutition, protection of the airway, and gustation.
- Only gustation is not often improved with surgical intervention

ANKYLOGLOSSIA

- Inferior frenulum attaches to the bottom of the tongue and subsequently restricts free movement of the tongue
- Occurs in approximately 1.7% of all neonates without preference for either gender
- Can cause feeding problems in infants
- May also cause speech defects, especially articulation of the sounds: l, r, t, d, n, th, sh, and z
- Treatment: Frenulectomy is recommended

ANKYLOGLOSSIA



Functional Classification of Ankyloglossia Based on Tongue Range of Motion Ratio (TRMR)

Grade 1 Functioning: TRMR > 80%

Grade 2 Functioning: TRMR 50-80%

Grade 3 Functioning: TRMR < 50%

Grade 4 Functioning: TRMR < 25%

LINGUAL THYROID

- The tongue forms at the same time as the thyroid gland from the pharyngeal floor and is anatomically associated with it by connection through the thyroglossal tract, the lingual remnant of which is known as the foramen caecum.
- The lingual thyroid is an anomalous condition in which follicles of thyroid tissue are found in the substance of the tongue, possibly arising from a thyroid anlage that failed to 'migrate' to its predestined position or from anlage remnants that became detached and were left behind.

ETIOLOGY

- Thought to be due in some cases to functional insufficiency of the chief thyroid gland in the neck, since some patients with such a lingual lesion are without a demonstrable main thyroid gland
- failure of the primitive thyroid anlage to descend

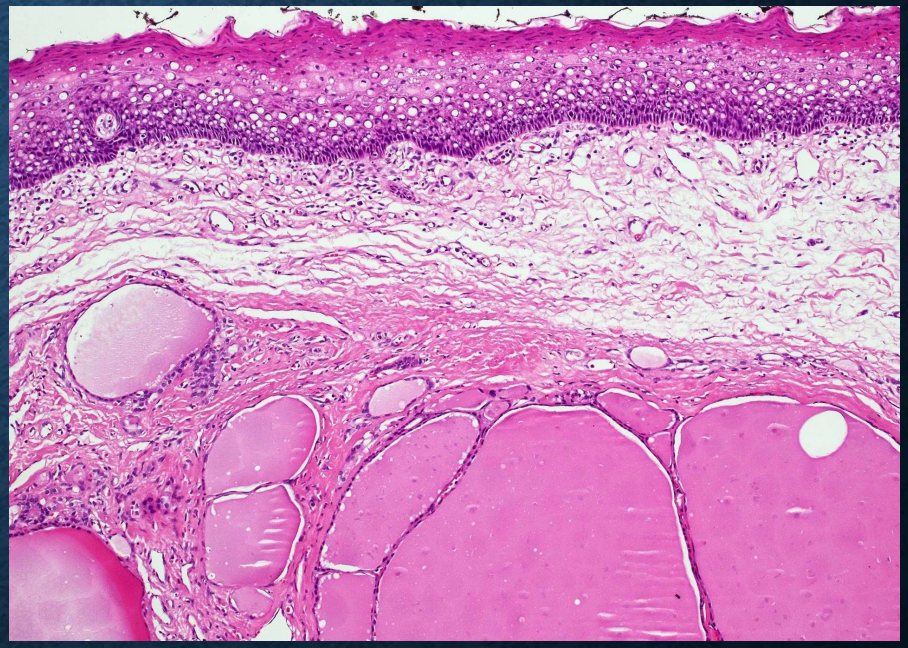
CLINICAL FEATURES

- the condition is more often clinically apparent in females
- a nodular mass in or near the base of the tongue in the general vicinity of the foramen caecum
- tends to have a smooth surface
- 2–3 cm in diameter
- presenting complaint is often dysphagia, dysphonia, dyspnea, hemorrhage with pain, or a feeling of tightness or fullness in the throat

LINGUAL THYROID

HISTOLOGIC FEATURES

- Resemble either normal thyroid tissue or thyroid tissue of an embryonal or fetal type.
- In some instances the nodules exhibit colloid degeneration or goiter.
- Great care must be taken to distinguish these lesions from lesions derived from accessory salivary glands in the same location.
- lingual thyroid may give rise to adenomas and adenocarcinomas in the tongue



TREATMENT

- a careful physical examination should be performed to demonstrate the presence of a normally located thyroid gland
- If the thyroid gland cannot be palpated, a scintiscan with a tracer dose of radioactive iodine, 131 I, should be carried out
- A trial of replacement thyroid hormone therapy before excision is contemplated
- Occasionally, the clinical manifestations of the lesion and its size necessitates surgical excision.

DIFFERENTIAL DIAGNOSES

Differential diagnoses include

- gumma of tertiary syphilis,
- the granuloma of tuberculosis,
- deep fungal infections,
- granular cell tumor

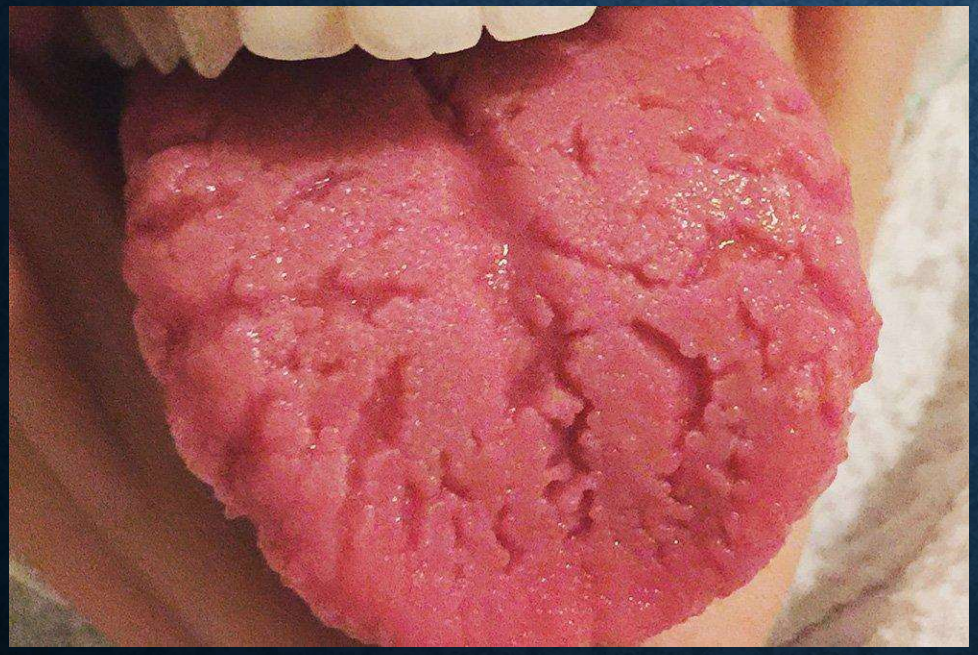
FISSURED TONGUE

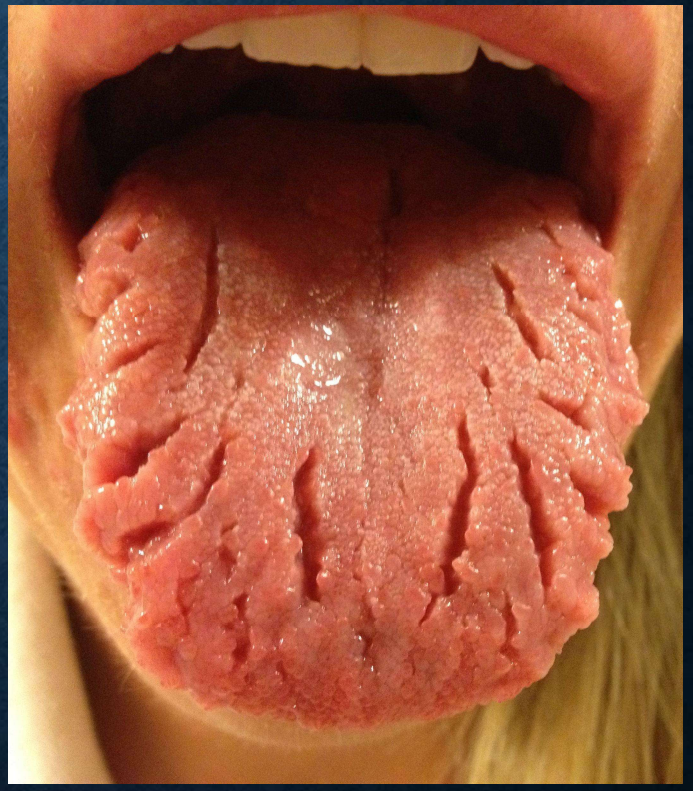
- characterized by grooves that vary in depth and are noted along the dorsal and lateral aspects of the tongue
- a polygenic mode of inheritance is suspected because the condition is seen clustering in families
- Asymptomatic
- Melkersson-Rosenthal syndrome and Down syndrome

CLINICAL FEATURES

- totally benign condition and is considered by most to be a variant of normal tongue architecture.
- No predilection for any particular race appears to exist.
- a slight male predilection.
- The prominence of the condition appears to increase with increasing age
- usually asymptomatic unless debris is entrapped within the fissure or when it occurs in association with geographic tongue
- Treatment: No definitive therapy or medication is required

FISSURED TONGUE





HAIRY TONGUE (LINGUA NIGRA, LINGUA VILLOSA, LINGUA VILLOSA NIGRA, BLACK HAIRY TONGUE)

- commonly observed condition of defective desquamation of the filiform papillae
- Most frequently referred to as black hairy tongue (lingua villosa nigra); however, hairy tongue may also appear brown, white, green, pink, or any of a variety of hues depending on the specific etiology and secondary factors (e.g. use of colored mouthwashes, breath mints, candies).

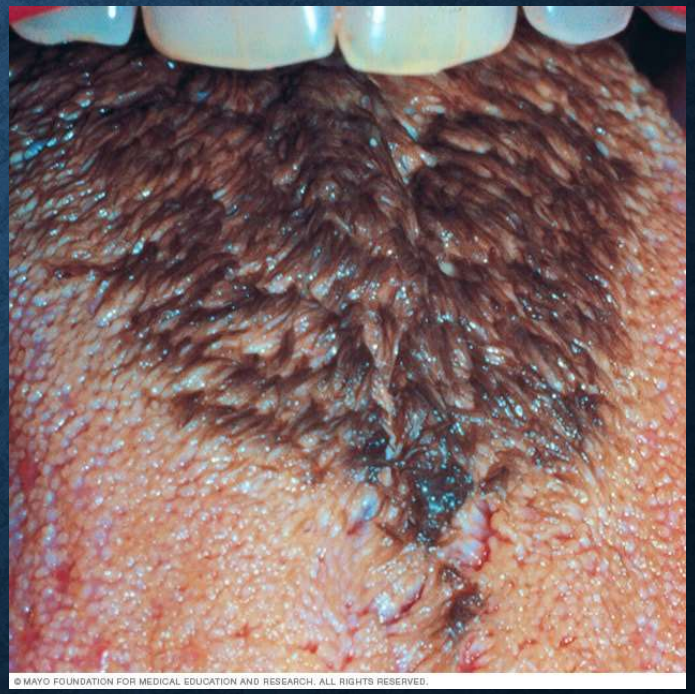
ETIOLOGY

- hypertrophy of filiform papillae on the dorsal surface of the tongue, usually due to a lack of mechanical stimulation and debridement.
- poor oral hygiene
- tobacco use and coffee or tea drinking.

CLINICAL FEATURES

- Normal filiform papillae are approximately 1 mm in length, whereas filiform papillae in hairy tongue are more than 15 mm in length.
- greater frequency in males, patients infected with human immunodeficiency virus (HIV), and those who are HIV negative and use intravenous drugs.
- rarely symptomatic, although overgrowth of Candida albicans may result in glossopyrosis (burning tongue).
- tickling sensation in the soft palate and the oropharynx during swallowing. In more severe cases, patients may actually complain of a gagging sensation.
- Halitosis-Retention of oral debris
- Bacterial and fungal overgrowth play a role in the color of the tongue.

HAIRY TONGUE

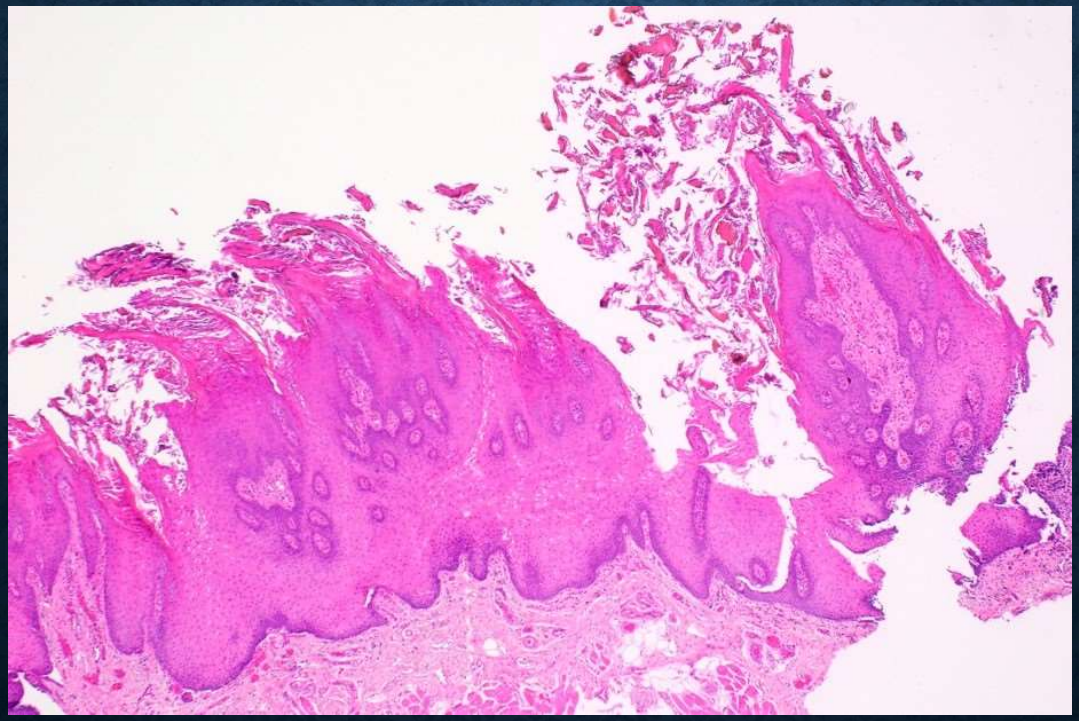


DIFFERENTIAL DIAGNOSIS

- candidiasis, leukoplakia, oral lichen planus and oral hairy leukoplakia.
- Culture of the tongue's dorsal surface may be taken if a superimposed oral candidiasis or other specific oral infection is suspected.
- Distinguishing between oral hairy leukoplakia and hairy tongue is important if patients are found or suspected to be HIV positive. This can be accomplished by a simple mucosal punch biopsy and appropriate immunostaining of the specimen for the presence of Epstein-Barr virus, the causative agent of oral hairy leukoplakia

HISTOLOGIC FEATURES

- Histopathologic findings in hairy tongue consist of elongated filiform papillae, with mild hyperkeratosis and occasional inflammatory cells.



TREATMENT

- brushing of the tongue with a toothbrush or using a commercially available tongue scraper is sufficient to remove elongated filiform papillae and retard the growth of additional ones.
- Surgical removal of the papillae by using electrodesiccation, carbon dioxide laser, or even scissors is the treatment of last resort