

ANATOMICAL STUDY OF JIVHA W.R.T. SAM AND NIRAM PRAKRITI PARIKSHA

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ABSTRACT

Inspection of the patients tongue is very important in the clinical examination to understand the underlying diseases. Greek physicians like Hippocrates and Galen considered different characteristics of the tongue to be an important indicator of health and diseases. The tongue gives peculiar appearance related to peculiar conditions. It reflects the overall digestive, nutritive and metabolic conditions of the body. Thus it can prove to be a key factor in determining many conditions and the overall health of the body. The present study aims at describing the anatomical changes occurring in *Jivha* that can help to diagnose the diseases early and prevent further complications of the diseases

Key words: Tongue, *Sam*, *Niram*, *Prakriti*, *Pariksha*

INTRODUCTION

Ayurveda is the oldest traditional medicine practiced in India. Researchers of India have tried to collaborate ancient wisdom with modern scientific practices. For proper treatment physician need to do a proper examination and then has to arrive at proper diagnosis. A Diagnosis is a statement or conclusion made on the basis of history and sign and

symptoms that describes the reason for a disease, illness or problem. There are many diagnostic tools described in *Ayurveda* for patient examination. Acharya *Yogaratanakara* provides a clear picture of illness and healthy condition through *Astavidh Pariksha*. One of the eight diagnostic tools explained in *Ashtvidh Pariksha* is tongue examination or *Jivha Pariksha*. It is simple to perform and has great significance.¹

Tongue is considered to be the index of the stomach which states its significance in the diagnosis of digestive system. Its features are expressed in other diseases also. Hence it has become an essential diagnostic procedure in the course of clinical examination.²

Hippocrates and Galen, when studied different characteristics of the tongue they implies tongue as an important indicator of health and diseases.³ *Ayurveda*, *Unani* and *Siddha* systems also considered importance of tongue and included refined methods of tongue diagnosis.³ According

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to the Chinese medicine, tongue is a map that corresponds to different body parts. Various body parts are connected with the some part of tongue, the tip is connected to the heart; the sides are connected to the liver; the centre to the spleen and the back to the kidney⁴. (fig.1)

Niram/ Prakrut Jivha (A Healthy and Perfect Tongue)

Niram/ Prakrut Jivha (Healthy tongue) is *Slakshana* i.e. moist which is neither too dry nor too wet and *Suchi* i.e. it doesn't emit a bad odour or taste. The veins beneath the tongue are deflated.(fig.2)

1. Colour: the colour of the tongue is *Shyava-rakta* i.e. is pale –red or Uniformly pink, similar to a skinned chicken and it is consistent across the entire tongue
2. Coating: the normal healthy tongue is usually *Nirlipta* i.e. without any coating or *Ishathlipta* i.e. it is thin transparent with thin white coating of mucous.
3. Shape: the shape of the tongue is *Tanu* i.e. it is neither too thick nor too thin and has even width or oval in shape.
4. Moisture: A healthy tongue is moist or *Slakshna*, it is neither too dry nor too wet. It is covered by a thin transparent layer of saliva.
5. Movement: A healthy tongue has no tremors or it is *Akampa*. It has no involuntary movements, when sticking out it is straight rather than tilting to one side
6. A normal tongue does not have any cracks on the surface of the tongue.⁵
7. It consist of small cylindrical taste buds on the entire top surface of the tongue.⁶
8. No teeth marks on the sides of the tongue

Jivha Pariksha (Examination of Tongue)

The tongue reflects the overall digestive, nutritive and metabolic conditions of the entire organs. It can prove to be a key factor in determin-

ing many conditions and the overall health of the body. Through its sense of taste, the tongue signals to the body, particularly to the digestive organs, to secrete the digestive juices that help the digestion. For example, the taste of fried food signals to the liver and gall bladder to release bile in order to digest its fat.

The tongue gives peculiar appearance related to peculiar conditions. Inspection of the patients tongue is very important in the clinical examination to understand the underlying diseases and it often gives a physician an insight into the health condition of the patient.

The examination of the tongue is divided into two parts:

1. Examination of the tongue body; and
2. Examination of the tongue coat, also called as moss.

Examination of the tongue body provides information on the general nutritive and structural condition of the internal organs and their tissues and condition of the blood and the bloodstream, which infuses and supplies the internal organs. Examination of the tongue coat gives information on imbalances in the body, particularly in the digestive system and the presence of toxins, or metabolic wastes. Generally, the tongue body depict conditions which are deep seated, systemic or chronic, whereas the tongue coat describes conditions which are acute, transient or superficial. Tongue examination can be done by observing the patient in Sitting/Supine position and asking the patient to open the mouth and protrude the tongue outside as possible to visualize clearly and observe carefully for its surface, size, colour, coating, etc and to know what is happening inside the body.(Fig.3)

Table 1: Tongue features in various Doshas
Various Doshas

DOSHA	TONGUE FEATURES
<i>Vataja</i>	Cold, Rough, and Fissured
<i>Pittaja</i>	Red ,Dark, Blue
<i>Kaphaja</i>	White, Greasy
<i>Sannipataja</i>	Black ,Ulceration, Fissure, dry
<i>Dvandvaja</i>	<u>Mixed features</u>

AAM/VIKRUT JIVHA (Abnormal Tongue)

Appearance of Tongue in Peculiar Conditions/Diseases

SIZE:

1. **Deerghajivha (Macroglossia):** in this condition the tongue is larger than normal and will show indentation of teeth on the outer surface of tongue. This condition can be seen in patients having Down's Syndrome, Acromegaly, myxoedema, angioedema, Tumours, *Bijadosha*.(fig.4)

2. **Hriswajivha (Microglossia):** a deficient, atrophic tongue will often look thin and leathery, and can have an upper surface that's concave, or hollowed out and thin laterally as well.

It can be due to Pseudobulbar palsy, Facial hemiatrophy, starvation, *Bijadosha*. (fig.5)

COLOUR: The colour of the body of tongue shows the general condition of the blood and the bloodstream, and basic balance of humors and nutrients. A discoloration of the tongue body localized in a particular reflex zone of the tongue indicates an imbalance occurring in its corresponding organ.⁸

Shwetabha (Pale): the pale coloured tongue features coldness and deficiency, as well as an excess of cold phlegmatic humours in the bloodstream. This may be seen in conditions like anaemia or blood deficiency, Malnutrition, *Vatajakshaya*, Pandu etc.(Fig.6)

Paridagdha (Red Raw/Angry looking): The red tongue is an indication of an excess of heat in the body. It could be systemic when the whole tongue body is affected, or localized in a particular organ or part if only certain reflex zones are affected. A bright red tongue indicates more acute or excessive heat while dark red tongue indicates chronic consumptive or deficiency heat, or a consumptive fever or dyscrasia of the blood. A red, sore, swollen tongue generally denotes an excess of blood Sprue, it can be seen in the conditions like Pellagra, severe and untreated diabetes, prolonged febrile illness. *Pittaja vruddi*, *Sannipataja jwara* etc.(Fig.7)

Shweta (White): White indicates that the build-up of toxins and morbid humours is of a cold, damp Phlegmatic in nature. Off-white, vanilla, or cream coloured shades in between these two extremes

indicate a balance or intermixture of hot and cold influences, and general toxicity and turbidity. The conditions where white tongue can be seen are Lichen planus, HIV, small number of non-HIV infected Immuno compromised individuals, *Khapakshaya*, *Ojakshaya* etc.(Fig.8)

Neela (Blue): the blue colour tongue is mainly due to insufficient oxygen supply to tissues, the condition may be caused by blood disorders diseased blood vessels cardiac dysfunction respiratory insufficiency for E.g. Central cyanosis, *Kaphavrudhi*, *Matatyaya Asadhya lakshana*.⁹ (Fig.9)

Purple: it is due to a deficiency of vital principles - Vital Force or Innate Heat - in the blood. Reddish purple tongue indicates stagnation of the blood and a light purple tongue indicates stagnation of the Vital Force. Purple spots on the tongue indicate a severe stagnation or cancellation of blood in the corresponding organ. Lighter shades of purple indicate a stagnation of the Vital Force that guides the blood; darker shades of purple indicate a stagnation of the blood itself. The purple colour tongue can be seen in conditions like Polycythemia vera, *Pittavrudhi*.(Fig.10)

Dark Red or Bluish Red: Polycythaemia vera, riboflavin deficiency, *Raktavrudhi*. Generally indicates an excess of heat in the body - systemic if the whole tongue and body is affected, or localized in a particular organ or part if only certain reflex zones are affected. If the tongue is bright red, it indicates more acute or excessive heat. A dark red tongue is often a sign of chronic consumptive or deficiency heat, or a consumptive fever or dyscrasia of the blood. A Red, sore, swollen tongue generally indicates an excess of blood.(Fig.11)

Strawberry (Paridandha): Scarlet fever, Kawasaki's disease and toxic shock syndrome, *Sannipataja Jwara*. (Fig.12)

Peeta (Yellow): rarely in jaundice, *Kamala*, *Kumbakamala*, *Purana Pandu*.(Fig.13)

Krishna (Black): fungus infection, iron, bismuth, opium, or tobacco, *Vatavrudhi*.(Fig.14)

Furred tongue (Liptajivha/ Upadehajivha): in all febrile illness especially typhoid, heavy smoking, poor oral hygiene, *Sannipataja Jwara*, *Amlapitta*, *Prameha Poorvarupa*.(Fig.15)

DRYNESS (ROOKSHA): in general dehydration as in vomiting and diabetes mellitus. Haemorrhage, mouth breathing, uremia, certain atropine like drugs may cause appearance of dry tongue. Bone dry tongue in Sjogreen syndrome, *Vatavruddi*.(Fig.16)

PIGMENTATION: it is seen in Peutz-jegher syndrome, malabsorption, Addison's disease, ACTH producing tumours, Albright's syndrome, Nelsons Syndrome.etc. (Fig.17)

SURFACE:

Atitanu (Smooth Or Bald tongue): an erythematous, edematous and painful tongue that appears smooth because of loss of the filiform and sometimes the fungiform papillae secondary to certain nutritional deficiency such as pellagra, thiamine deficiency Iron deficiency anaemia, Pernicious anaemia, Vitamin B complex deficiency or malabsorption, *Kapha Vaishamya*.(Fig.18)

Kharajivha/Kantakajivha (fissured Tongue): In fissured tongue, deep grooves can develop due to physiologic deepening of normal tongue fissures. These typically occur with aging and require no treatment, unless trapping of food and bacteria leads to inflammation of the fissures. Gentle brushing of the tongue is useful in persons with symptomatic inflammation. Fissured tongue has been associated with Down syndrome, acromegaly, psoriasis, and Sjögren syndrome. Melkersson-Rosenthal syndrome is a rare disorder of unclear aetiology that is characterized by a triad of severe fissuring, relapsing orofacial oedema, and facial nerve palsy. It can also be seen in Vitamin B complex deficiency, acute glossitis, Acromegaly, congenital scrotal tongue. *Tridoshaja* etc.(Fig. 19)

Scarred tongue: scars on tongue may be traumatic, secondary to ulcer from tongue biting as in epilepsy, *Abhighataja*.(Fig.20)

Mushroom like tongue: Sore tongue covered with whitish slough can be seen in acid poisoning.(fig.21)

Hairy tongue: Hairy tongue is due to elongation of the filiform papillae which results due to poor oral and general health. The distinct look of black hairy tongue usually due to a build up of dead skin cells on the numerous tiny projections (papillae)

on the surface of tongue that contain taste buds.¹⁰(fig.22)

Geographic tongue: there is irregularly shaped red and white patches resembling a map on dorsal and lateral surfaces. It is also known as benign migratory glossitis or erythema migrans, and is of unknown aetiology. (Fig.23)

Median rhomboid glossitis (MRG) (central papillary atrophy): is a condition with smooth nodular red areas in the posterior mid line of the tongue. MRG is typically located around the midline of the dorsum of the tongue. The predisposing factors associated with MRG are smoking, denture wearing, diabetes mellitus, as well as candidal infection.¹¹ (fig. 24)

MOVEMENTS:

1. Slow rhythmic tremor stopping on voluntary extrusion of tongue in Parkinsonism (*Kampvata*), Backward and Forward (*Adhajivhika*) Trombone tremor of GPI
2. **Lizard Tongue:** (Jack in the box or watch spring tongue, *Jivha vepana*) in rheumatic chorea, *Trushna Nirodhaja Daha*.(Fig.25)
3. **Deviated Tongue:** Hypoglossal nerve paralysis, malignant infiltration, severe ulcerations (*Mukhapaka*) Facial Paralysis (*Ardhita or pakshaghata*) (Fig.26)
4. **Stabda Jivha** (Immobile Tongue): Bilateral lingual paralysis, bulbar palsy, syringomyelia. Sluggish and slow protrusion in mental retardation. Increasingly slow movement in myasthenia Gravis, *Jivhastanbha*. (Fig.27)

CONCLUSION

Inspection of the patients tongue is an important starting point in the clinical examination. Tongue is a reflection of what is happening inside the body. A careful observation of the state of tongue, its colour and shape often gives a physician an insight into the health condition of the patient. There are various peculiar appearance of the tongue related to peculiar conditions. Along with other examination of *Astavidh parikshna* and *Lakshana* (Symptoms), tongue examination is an easy and indispensable part to know *Sama*, *Nirama* and *Vruddi*, *Kshaya avastha* of the *Dosha*, finally in the

Sapekshanidana (Diagnosis) of the disease. So, one should examine tongue very carefully and thoroughly.

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Figures and their legends

Fig 1. Tongue reflex zones

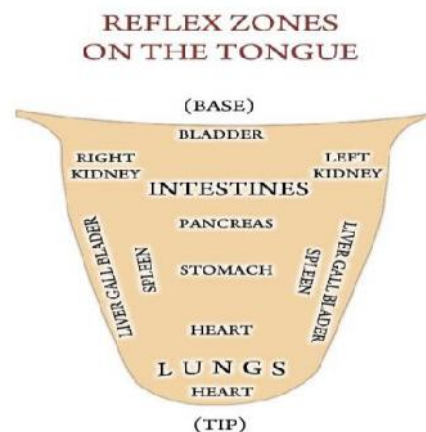


Fig.2 Sam Jivha (Normal tongue)

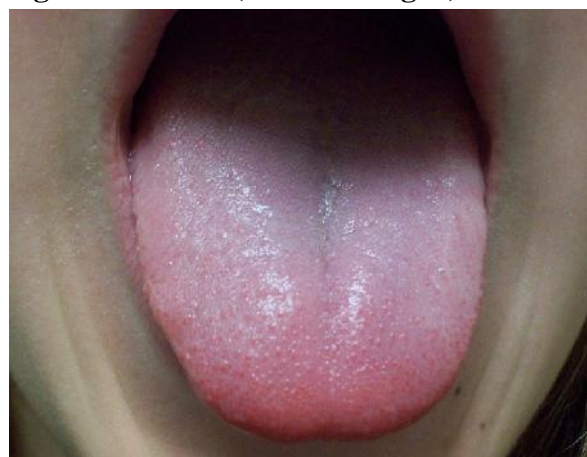


Fig.3. Examination of tongue



Fig.4 : DeerghaJivha (Macro glossia)



Fig.7.Paridagdha Jivha (Raw Red tongue)



Fig.5 Hriswajivha (Microglossia)



Fig.8 shweta jivha (white tongue)



Fig.6 Shwetabha (Pale)Jivha



Fig. 9.Neela Jivha (Blue Tongue)



Fig.10 Purple tongue



Fig.13. Peeta Jivha (Yellow Tongue)



Fig.11 Dark Red or Bluish Red tongue



Fig 14. Krishna jivha (Black Tongue):



Fig.12: Strawberry tongue



Fig.15. Furred tongue (Liptajivha/ upadehajivha)



Fig. 16 Dryness (Rooksha Jivha)



Fig. 17 Pigmented Tongues



Fig. 18 Atitanu (Smooth Or Bald tongue)



Fig.19 Kharajivha/kantakajivha (fissured Tongue)



Fig.20 Scarred tongue



Fig 21. Mushroom like tongue



**Fig 22. Hairy tongue
Fig.25. Lizard Tongue**



Fig.24. Median rhomboid glossitis



Fig. 26 Deviated tongue



Fig. 23 geographic tongue



Fig.27 Stabda Jivha (Immobile Tongue)



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