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Review Article

A COMPREHENSIVE REVIEW OF ETIO-PATHOGENESIS OF TUNDIKERI

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*Correspondence	Abstract
Dr. Radha Jindal PG Scholar, Department of Post Graduate Studies in Kaumarabhritya, SDM College of Ayurveda and Hospital, B.M. Road, Hassan, Karnataka, India DOI: 10.7897/2321-6328.01319 Article Received on: 12/07/13 Accepted on: 20/09/13	In Ayurveda Tundikeri is explained under diseases of oral cavity. This disease is grossly explained in Ayurvedic literature under classifications of Kanthagata and TalugataRoga. It is mainly characterized by Shopha (swelling) involving inflammation of faucial tonsils. In contemporary science, it may be correlated to tonsillitis. It is the eighth most common presenting complaint in paediatric practice. The presenting data evolves need to understand the causative factors and pathogenesis of Tundikeri. The concept is drawn from various classical texts of Ayurveda and interpreted in current scenario. The specific treatment principle at each stage of disease (Kriyakala) is the key point in this article. Tundikeri in children causes pain. To avoid that one needs to prevent it through Ayurveda. The minute understanding of its etio-pathogenesis will help in checking this disease at the earliest for early intervention. Keywords: Tundikeri, Kanthagata, treatment principle, Kriyakala, Etio-pathogenesis

INTRODUCTION

Tundikeri is one of the common prevalent diseases in paediatric age from 5 -10 years of age. It generates morbid conditions in maximum number of children during the first few years of life. The incidence of this disease is about 7 % of all visits to the paediatrician¹. The word Tundikeri gives a general meaning of a disease which occurs in oral cavity. It is defined as a swelling occurring at root of Hanusandhi (temporo-mandibular joint) resembling VanakarpasaPhala (cotton fruit)^{2,3}. Tundikeri is mentioned in the context of Mukharoga (diseases of oral cavity)⁴. In Ayurveda, while

describing its surgical management it is dealt under Talugata Roga (diseases of palate)⁵. The etio-pathogenesis with treatment explained in the context of Kanthagata Roga (diseases of throat)^{6,7}. In contemporary science the symptoms of Tundikeri may be co-related to Tonsillitis.

Causative Factors

Although specific causes are not mentioned in classics, general etiological factors of Mukharoga may be considered. Causative factors can be grouped under- Aaharaja (dietic causes) (Table 1) and Viharaja (lifestyle causes).

Table 1: Showing Dietic Causes

S. No.	Food items	Taste	Quality	Potency	End of metabolism	Vitiation in Dosha
1	Matsya (fish) ⁸	Madhura (sweet)	-	Ushna (hot)	Amla (sour)	Pitta, Kapha
2	Mahisha Mamsa (meat of buffalo) ⁹	Madhura (sweet)	Guru (heavy), Snigdha (unctous)	Ushna (hot)	-	Kapha, Rakta and Pitta
3	Masha (Black gram) ¹⁰	Madhura (sweet)	Guru (heavy)	Ushna (hot)	-	Kapha, Pitta
4	Dadhi (curd) ¹¹	Amla (sour)	Guru (heavy)	Ushna (hot)	Amla (sour)	Kapha, Pitta
5	Ksheera (milk) ¹²	Madhura (sweet)	Snigdha (unctous)	Ushna (hot)	Amla (sour)	Kapha
6	Eksurasa (sugarcane juice) ¹³	Madhura (sweet)	Snigdha (unctous) and Guru (heavy)	Sheeta (cold)	Madhura (sweet)	Kapha
7	Phanitham (Preparation from sugarcane) ¹⁴	Amla (sour)	Guru (heavy)	Sheeta (cold)	Madhura (sweet)	Kapha

Lifestyle Causes

Dantadhavana (brushing), Kaval / Gandoosha (gargling) are measures, to maintain the oral hygiene. Escaping from these daily habits, leads to Kapha Dosha vitiation. Avaksayanam (sleeping in prone position)¹⁵ creates hindrance to the free flow of saliva causing Kapha Dosha vitiation. Taking bath daily after heavy diet, indigestion, drinking / bathing in cold water, excessive talking after eating and suppression of natural urges etc. aggravates Vata Dosha. Vitiating Vata Dosha deranges Kapha Dosha which congests the channels of oral cavity. The above mentioned foods and lifestyles create an environment in the throat for the invasion of bacteria in the tonsils, thus leading to inflammation. Tonsillitis is one primary focus of infection. Morbid conditions are created due to secondary infection of upper respiratory tract infection. Adeno-virus groups of viruses are the most common pathogens involved in tonsillitis. Bacterial infection may be secondary to viral invasion. Common causative bacteria include *Haemolytic Streptococcus*, *Staphylococcus*, *Haemophilus Influenza* and *Pneumococcus*.¹⁶

Pathogenesis in Light of Kriyakala

The disease progresses step by step and it can be treated at the proper time, if one has knowledge of Kriyakala (stages of diseases)¹⁷

Sanchaya (accumulation)

Due to excessive indulgence of above said causative factors, Kapha Dosha gets vitiated. The vitiation is in the form of quantitative increase. Some general symptoms like laziness, heaviness in body, drowsiness and mild irritation in throat may be seen.

Prakopa (provocation)

The severity of the disease is increased and the patient may complain of pricking sensation in throat. One may also develop aversion to food.

Prasara (propagation)

In this stage of disease, bodily symptoms of inactivity and distaste in mouth can be observed. There is more pain in throat region. Patient may complain of difficulty in swallowing.

Sthana Samsraya (localization)

The Dosha which is vitiated causes Srotorodha (obstruction of body channels). Prodromal symptoms of the disease are seen. There may be Daha (burning sensation) and Toda (severe pain) at the throat.

Vyakta Avastha (manifestation)

The disease is well established and all the symptoms of Tundikeri are seen. The swelling is Karpasaphala Sannibha. Symptoms like Bheda (pricking pain), Picchila Srava (excess salivation) and Galoprodha (dysphasia) can be observed. Patient also complains of weakness of body, anorexia and may have fever.

Bheda Avastha (resolution/chronicity)

Now the disease becomes chronic. Katina Shopha (enlarged hardened swelling), unpleasant taste, bad smell in mouth (halitosis), Prapaka (suppuration) and change in voice may be seen in the patient. If the disease goes untreated it may undergo suppuration. (Figure 1)

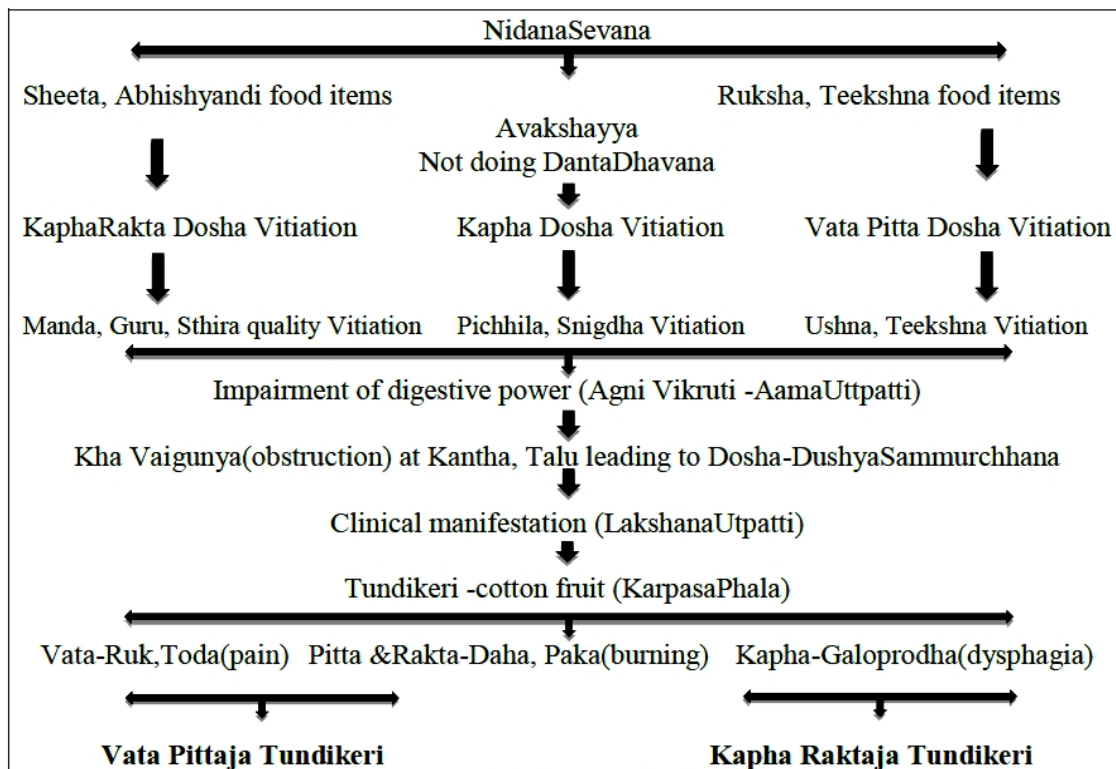


Figure-01 Samprapti of Tundikeri

There are two types of Tundikeri-VataPittaja and Kapha Raktaja¹⁸. The onset of Vata-PittajaTundikeri (Acute Pharyngo-tonsillitis) is quick and the disease attains suppuration quickly. This is attributed to Teekshna Guna (penetrating nature) of Pitta. The onset of Kapha-Raktaja Tundikeri (Chronic follicular tonsillitis) is slow with less suppuration due to involvement of Manda Guna of Kapha.

Samprapti Ghataka

Nidana: Kapha, Rakta aggravating foods and local unhygienic conditions

Dosha: Pradhana- Kapha; Anubandhi- Vata, Pitta, Rakta
Dushya: Rasa, Rakta, Mamsa
Srotas: Rasavaha, Raktavaha, Mamsavaha
Agni: Jatharagni Mandya (low digestive power)
Srotodushti: Sanga (obstruction)
Roga Marga: Abhyantara
Udbhava Sthana: Amashaya
Adhishthana: Hanusandhi (temporo-mandibular joint)

Table 2: Showing treatment of Tundikeri in view of Kriyakala

Stage	Dosha	Guna	Symptoms	Treatment
Sanchaya	According to causative factors	According to causative factors	Alasya (laziness), Upalepa in Mukha (coating in mouth)	Prevention of causative factors
Prakopa	Pitta, Kapha	Sthira, Guru, Picchila, Sheeta	MandaVedana (mild pain), Pricking sensation in throat	Shodhana of Mukha, Pratisarana (rubbing), maintenance of oral hygiene
Prasara	Vata	Ruksha, Khara, Ushna, Sukshma, Chala	Ruk (soreness of throat)	Kavala/Gandusha (gargling) with hot water, Dosha Pratyanka Aushadi (opposite to Dosha)
Sthana Samshraya	Pitta, Kapha, Rakta	Teekshna, Usna, Vidahi	Daha (burning sensation), Sopha (hyperaemia)	Kavala/Gandusha (gargling) with Deepana-Pachana (digestive) medication, Nasya (nasal medication)
Vyakta	Vata, Pitta, Kapha, Rakta	Sthira, Guru, Manda	Sotha (swelling of tonsils) Galavarodha (dysphagia)	Use of Paniya Kshara, Vyadhi Pratyanka Aushadis (opposite to diseases), Chedana (incision)
Bheda	Vata-Rakta: Acute Vata-Kapha: Chronic	Kleda, Tikshna, Ruksha, Khara, Vidahi	Paka (pus) Toda (pricking pain)	Bhedana (excision), Kshara Karma

Factors for the chronicity of Tundikeri

Leenavastha of Dosha

If Dosha are deep seated, it will become difficult to diagnose the disease at its early stage. Hence condition may turn into chronic.

Apathya Sevana

Due to improper diet and habits during Vyadhimuktavastha (convalescence period), the complications of Tundikeri may develop.

KrichhasadhyaVyadhi

If the condition remains untreated; the prognosis of Tundikeri may be Krichhasadhya (difficult to cure).

Rules and Regulations

Congenial Diet

Dhanyam (cereal), Yava (*Hordeum vulgare*), Mudga (*Phaseolus mungo*), Kulattha (*Dolichosbiflorus*), Jangala Mamsarasa (meat soup of animals of dry regions), Karavella (*Momordiacherantiana*), Patola (*Trichosanthesdioica*), Balamula (*Sida coridfolia*), Karpooraneeram (camphor water), Tambula (*Piper betel*), Taptambu (boiled water), Khadira (*Acacia catechu*), Ghrita (ghee) and other Katu-TiktaVeerya Dravya.

Congenial Therapies

Svedana (sudation), Virechana (purgation), Vamana (emetics), Gandoosha and Kavala (gargling), Pratisarana (local rubbing of medicine), Asrasruthi (blood-letting), Nasya (errhine therapy), Dhoomapana (inhalation of medicated smoke), Sashttra Karma (surgical procedure) and Agnikarma (cauterisation)

Non-congenial Diet

Amla Rasa (sour taste), Matsya (fish), Anupa Mamsa (meat of animals of marshy land), Dadhi (curd), Ksheera (milk), Masha (black gram), Ruksha, Kathina Anna (dry, hard food stuffs) and Abhishyandi (food stuffs causing obstruction of body channels).

Non-congenial Lifestyle

Snana (bathing) and Divaswapna (sleeping during day).¹⁹

DISCUSSION

The nomenclature of Tundikeri is based on morphological appearance. The exact location is mentioned as Temporo-mandibular joint, which creates confusion whether it is an internal structure or can be felt externally.

Incidence

The incidence of Tundikeri is more in Bala and Kaumara age group due to underdeveloped immunity. The prevalence and recurrence of the Tundikeri is found more predominantly during the period of July to January. It is due to rainy and cold season which facilitates accumulation of Kapha Dosha and even growth of bacteria and virus.

Dietic Factors

The Nidana discussed in classics may not be detected in history taking but new items like ice-creams, bakery foods and chocolates may vitiate the Dosha in current scenario. Light to digest, pungent, bitter taste food articles are congenial for the disease. While heavy, oily food articles aggravate the disease.

Lifestyle Factors

Sleeping in prone position causes accumulation of salivary secretions preventing the bactericidal enzymes- thiocyanate

ions and lysozyme to work²⁰. Non-practising night teeth brushing and oil-pulling lead to poor oral hygiene, this in turn acts as source of secondary infection.

Pathogenesis

In Tundikeri Pradhana Dosh is Kapha, Rakta and Anubandhi Dosh is Vata, Pitta. Tundikeri is easy to treat when it involves Rasa, Rakta Dhatu (acute) but it becomes difficult when it approaches the Mamsa Dhatu and forms Granthi (chronic).

Types

In Kapha-Raktaja Tundikeri (chronic follicular tonsillitis) pain in throat is more during morning and evening hours (Kapha Pradhana Kala). In Vata-Pittaja Tundikeri (parenchymatous tonsillitis) pain is constant throughout the day and night.

Prevention

The disease of Tundikeri is recurrent in nature. It can be prevented if attention is given to causative factors and pathogenesis. Slight changes in lifestyle can prevent this disease.

CONCLUSION

Tundikeri is a clinical condition which is very common into day's paediatric practice. It can be managed easily with complete understanding of its etio-pathogenesis. This helps in planning treatment as per the respective stage and Dosh. As surgical management, tonsillectomies are being practiced in children, which further hamper their immunological function. Thus clinician's role to diagnose and treat Tundikeri at the earliest is found very effective. One should also keep in mind the preventive measures to avoid the pain of the ailment in young children.

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REFERENCES

1. Pediatric medicine-tonsillitis-children [homepage on internet]. Available from: http://www.gponline.com/clinical_article/1024856/Pediatric_medicine-tonsillitis-children. Surfed on 23 march; 2013.
2. Raja Radhakantadev Bahaddur. Shabdakalpadrum Volume 2. 3rd Edi. Varanasi; ChaukhambhaSanskrita Series Office; 1967. p. 632. PMID:PMCI1842112
3. Shri. TaranathTarkaVachaspati Bhattacharya. Vachaspatyam Volume – IV. 1st Edi. Varanasi; ChaukhambhaSanskrita Series Office; 1966. p. 3323.
4. Sushruta. Kaviraj Ambikadutta Shastri editors. Sushruta Samhita. 13th Edi. Varanasi; Chaukhambha Sanskrit Bhavana; 2002. p. 294.
5. Sushruta. Kaviraj Ambikadutta Shastri editors. Sushruta Samhita. 13th Edi. Varanasi; Chaukhambha Sanskrit Bhavana; 2002. p. 298.
6. Vagbhatta. Anna Moreswar Kunte editors. Ashtanga Hridaya with commentaries Sarvangasundara of Arundutta and Ayurvedarasayana of Hemadri. 14th Edi. Varanasi; Chaukhambha Sanskrit Bhavana; 2003. p. 848-50.
7. Vagbhatta. Harinarayana editors. AshtangaSangraha Moolamatra. Varanasi; Chaukhambha Sanskrit Bhavana; 1996. p. 367.
8. Vagbhatta. Ravidutta Tripathi editors. Ashtanga Sangraha with Vidyotini Hindi commentary. 10th Edi. Varanasi; Chaukhambha Sanskrita Samsthana; 1999. p. 131.
9. Vagbhatta. Ravidutta Tripathi editors. Ashtanga Sangraha with Vidyotini Hindi commentary. 10th Edi. Varanasi; Chaukhambha Sanskrita Samsthana; 1999. p. 134.
10. Vagbhatta. Ravidutta Tripathi editors. Ashtanga Sangraha with Vidyotini Hindi commentary. 10th Edi. Varanasi; Chaukhambha Sanskrita Samsthana; 1999. p. 121.
11. Vagbhatta. Ravidutta Tripathi editors. Ashtanga Sangraha with Vidyotini Hindi commentary. 10th Edi. Varanasi; Chaukhambha Sanskrita Samsthana; 1999. p. 101.
12. Vagbhatta. Ravidutta Tripathi editors. Ashtanga Sangraha with Vidyotini Hindi commentary. 10th Edi. Varanasi; Chaukhambha Sanskrita Samsthana; 1999. p. 98-9.
13. Vagbhatta. Ravidutta Tripathi editors. Ashtanga Sangraha with Vidyotini Hindi commentary. 10th Edi. Varanasi; Chaukhambha Sanskrita Samsthana; 1999. p. 103-4
14. Vagbhatta. Ravidutta Tripathi editors. Ashtanga Sangraha with Vidyotini Hindi commentary. 10th Edi. Varanasi; Chaukhambha Sanskrita Samsthana; 1999. p. 104.
15. Sushruta. Jadavjitrikamji Acharya editors. Sushruta Samhita. Varanasi; Chaukhambha Surbharati Prakashan; 2003. p. 333.
16. Tuli Ishapreet, Tuli BS. Diseases of tonsils and adenoids. Textbook of ear, nose and throat. 1sted. New Delhi; Jaypee Brothers; 2005. p. 242.
17. Rao Ramsundar M. Shareera Kriya Vignanam. 7th ed. Vijayawada; Sushruta publishers; 2004. p. 70-9.
18. Madhava. Bramhan and Tripathi editors. Madhava Nidaana with Madhukosha commentary Volume 2. 1st Edi. Varanasi; Chaukhambha Surbharati Prakashan; 2003. p. 305.
19. Govinda Das, Kaviraj Shri Ambika Dutta Shastri editors. Bhaishajya Ratnavali with Vidyotini commentary. 13th Edi. Varanasi; Chaukhambha Sanskrita Sansthana; 1999. p. 676.
20. Guyton Arthur C, Hall John E. Secretory functions of alimentary tract. Textbook of medical physiology. 9th ed. Bangalore; Prism books; 1996. p. 819.

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