

A CONCEPTUAL REVIEW OF LITERATURE OF GOITER WITH SPECIAL
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ABSTRACT

This study investigates the co-existence rate of nasal carriage of *Staphylococcus aureus* and SARS-CoV-2 virus among apparently healthy students of Ambrose Alli University in Ekpoma, Edo State. A total of 173 nasopharyngeal swab specimens were collected and analyzed. Bacterial isolates were identified using Gram staining and biochemical tests, including catalase and coagulase tests, along with a diagnostic kit for total antibody to SARS-CoV-2 (ELISA). The prevalence of nasal carriage of *Staphylococcus aureus* was 17.3%, SARS-CoV-2 was 65.9%, and co-infection of both was 9.8%. The highest co-existence rate was observed in the age range of 21-25 years, with 19.3% for *Staphylococcus aureus* and 62.5% for SARS-CoV-2. The study population comprised 109 females and 64 males, potentially contributing to the observed high prevalence rates. The results suggest that COVID-19 vaccination and outpatient treatment may be crucial in reducing hospital admissions and the risk of *Staphylococcus aureus* co-infection in individuals with SARS-CoV-2 antibodies.

KEYWORDS: *Staphylococcus aureus*, SARS-CoV-2, co-existence, prevalence, nasal carriage.

INTRODUCTION

Goiter (Gala Ganda) is a condition characterized by the abnormal enlargement of the thyroid gland, which is located in the neck. The thyroid gland plays a crucial role in regulating various bodily functions. In Ayurveda, Goiter (Gala Ganda) is believed to occur due to an imbalance of the Vata and Kapha doshas, two fundamental energies that govern the body. When these doshas are disrupted, toxins can accumulate, digestion can become impaired, and metabolic disturbances can arise, ultimately affecting the thyroid gland. Ayurveda takes a personalized concept to healthcare, focusing on restoring the balance of these doshas through various treatments and lifestyle modifications.

Ayurveda, the science of life is the holistic alternative system of medicine. The origin of this science is already evident in Atharvanaveda. Eventually Ayurveda was originated into its own compact system of health and considered as a branch of Atharvanaveda. The main aims of this science are to maintain one's health and to protect the human beings from various diseases, which are acquired. Among many things man aspires to attain in life, a healthy body and healthy mind are the first to be sought for. The aim of all medical system should be a

healthy body and healthy mind. Ayurveda is one such system that prevailed from many years. Health is defined as the condition in which the sharirika and the manasika bhavas exist in a state of equilibrated normalcy.

Goitre is common among people of the Himalayas due to the iodine deficiency. As medical aids reached to the feet of common man and communication is developed in association with that of luxuries and changed dietetics this disorder prevailed all over the globe and especially a developing country, India.

An increasing number of patients of Goitre and many more Thyroidectomies, either partial or complete are evidential for the above discussion. Ayurveda is a golden mean between pure sciences and philosophical sciences. Therefore it becomes interesting to know how Ayurveda looks to a problem, which appears to be untouched in Ayurveda.

Endocrine disorders and concept of hormone are such problems noted here. In Ayurveda there is not an exact term for thyroid gland. Therefore it is not possible to get an explanation of physiology and pathology of thyroid gland from our ancient books. Some of the later

Ayurvedic scholar tried to name the thyroid gland, but they could not compare many thyroid disorders with any of the ancient descriptions.

We can correlate goitre and some tumor pathology of thyroid to 'Galaganda' where thyroid functions may or may not be affected. But hypothyroidism and hyperthyroidism have the symptoms related to many portions of the body. It is very difficult to correlate these two entities with any of the nomenclated diseases of Ayurveda.

In this fast forward life, the life style of man has changed. He is very much busy with the day today schedules to acquire more earnings. This more desire have made the man to deviate from following the swastha vrutta, thereby becoming a victim of diseases. So in the young adult age itself man, has become victim of severe degenerative diseases like Sandhivata, Manyasthamba etc., and other multi systemic metabolic disorders like endocrine diseases, diabetes, etc., Among such diseases Galaganda (goiter) is a common one nowadays. The gradual increase and prevalence of Galaganda draws attention over the deviation of lifestyle and balanced diet in the modern society.

Mass in the neck, pain in the neck etc characterizes the disease 1, and it is a serious metabolic disorder, as it affects almost all systems of the body. It is most common nowadays in every part of the world. Which is considered as a serious metabolic disorder that makes a strong impact on one's daily life. Contemporary medical science are able to pacify the disease through anti thyroid drugs, radio active iodine and if needed through the surgical treatment as the final with its own limitation.

CONCEPTUAL REVIEW

Etymology of Galaganda

Galaganda in which inflammation done in Galpradesh, it is a popular disease.

The word Galaganda comprises of two parts - gala and ganda.

- **Gala** - is a word of masculine gender and it is derived by the union of 'Gal' dhatu and 'Ap' pratyaya or by the union of 'Gru' dhatu and 'Vyap' pratyaya. It means the pathway of food, i.e., kantha.
- **Ganda** - is a word of masculine gender. It is derived either by the union of 'Gadi' dhatu and 'Ach' pratyaya or 'Gata' and 'Njantadda' sutra. As per Medini Kosha, it means pidaka or budbuda and as per Ramanathateeka on Amarakosha, it means sphotaka or granthi.
In a nutshell, Galaganda relays the meaning, the sphotaka or ganda in the ganda. The relative term from the contemporary medical science is goiter.
- **Goitre**- The term goitre is derived from the French word 'goiter'; which is originally derived from the Latin word 'gutter' - means 'throat'. We use the term 'goiter' to denote the enlargement of thyroid gland

irrespective of its cause. The pocket oxford dictionary speaks the meanings of Goitre as –

- Goitre n. (Brit. goitre) morbid enlargement of the thyroid gland. [Latin guttur throat],
- Goitre n. (US goiter) morbid enlargement of the thyroid gland. [Latin guttur throat]

DEFINATION

Definitions In almost all Ayurvedic treatises Galaganda is described elaborately.

- Susruta defines it as a swelling (mass in the neck region), by the vitiation of Vata, Kapha and medo dhatu. But Dalhana and Gayadasa, in their commentaries mention it as a swelling in the neck (Nibadhaswayathu)
- Charaka mentioned that when a vitiated Kapha Dosha circulates around the neck, it will cause swelling slowly is termed as Galaganda
- Madhava Nidana explanation is more authentic as it states that Galaganda is a swelling attached to the neck which hangs down like a scrotum. He also quotes the definition of Bhoja here as "Mahantam shopham alpam va hanu manya galashraye" i.e. A swelling resembling and hanging like a scrotum in the Hanu, Manya, and Gala is called as Galaganda.
- From the contemporary medical science, Goitre is defined as a benign, non-toxic enlargement of the thyroid gland usually secondary to some form or other of the iodine deficiencies. The disease is characterized by swollen throat, hoarseness of voice, slight pain, in the neck region, difficulty to swallow, etc.

Epidemiology

The thyroid disorders and goitre are common in the females, in the certain ages, in specific part of the world. So the epidemiological evidences of these diseases are very much important in detecting the cause and is useful to decide the treatment and in the prevention of those diseases also.

- **Age:-** The age of the patient is a Very important consideration. Simple goitre is commonly seen in girls approaching puberty and in pregnant women because in puberty and in pregnancy, the requirement of hormone is augmented. Both multinodular and solitary nodular goitres as well as colloid goitres are found in women of 20s and 30s. The primary toxic goitre is usually present in young ones, where in Hashimoto's disease the victims are middle-aged women.
- **Sex:-** Majorities of the thyroid disorders are seen in females. All types of simple goitres are far more common in the female than in male. Thyro-toxicosis is 8 times common in females than in males. Even thyroid carcinomas are more often seen in females in the ratio 3:1.
The prevalence of hyperthyroidism is about 20/1000 females; males are affected 5 times less frequently. The female to male ratio of hypothyroidism is 6:1.

• Geographical distribution

Except endemic goitres due to iodine deficiency, no other thyroid disorders lies among peculiar geographical distribution.

Certain areas are particularly known to have low iodine and food. These areas are, Rocky Mountains, e.g.- Himalayas, the Vindhyas, the Satpudha ranges, which form the goitre belts in India. Such goitres are common in Southern India than in Northern India.

Endemic goitres are common in low land areas where the soil lacks iodides or the water supply comes from far away mountain ranges. Calcium is also Goitrogenic and areas producing chalks and limestones are also Goitrogenic areas.

DISCUSSION

Nidana

According to the treatment point of view, the knowledge of hetu is important so as to enable the physician to advice the patient to avoid the practice of Nidana, as it is mentioned "Nidana Parivarchanam Eva Chikitsa"

1. Aharaja Nidana

It can be divided into Vata prokapa, Kapha prakaopa and Medoprakopa karanas. Consumption of Aharas having Vatika and Kaphaja predominance causes vitiation of Kapha, Vata in the body.

The intake of tikta, katu, kashaya rasa, rookshannam, alpamata bhojanam etc vitiate then Vata Dosha. The intake of madhura, amla, Lavana, snigdha, guru, abhishyanda, seeta, types of foods will vitiate Kapha Dosha.

2. Viharaja nidanam

Vegadharanam, Vegotheeranam, Nisajagaranam, Atyuchabhashanam, Shodanadiatyogam, Bhayam, Dukham, Chinta, Sramam, Upavasam, etc will vitiate Vata Dosha. Aasyasukham, Swapnasukham, Ajeeranam, Divaswapnam, brhmanatyogam, Shodanadi ayogam, Avyayamam, etc will vitiate the Kapha Dosha.

These two factors (the aharaja and viharaja factors) will vitiate the Vata and Kapha Dosha. These are all the etiological factors of Vataja and Kaphaja sapham also.

Poorvarupa

Poorvarupa are the prodromal symptoms of the forthcoming disease, which do not clarify the Samprapti of the disease. These symptoms will be few and not clear.

According to Madhava Nidana, Poorvarupa are the symptoms which are produced during the process of sthana samsraya by vitiated Doshas, when Samprapti has not been completed and disease has not been manifested.

But prodromal symptoms of Galaganda are not mentioned in any of the classical texts. From the recorded data of the patients we can say the purvarupa in general. The vitiated Kapha, Vata, and medas will show some lakshnas such as mild swelling of the neck, pain the neck, heaviness of the body, hoarseness of voice etc.

Lakshana of Galaganda in detail

All the authors except Charaka have mentioned the types of Galaganda. It is of three types as Vataja Galaganda, Kaphaja Galaganda and Medoja Galaganda. The Lakshana mentioned by various Acharyas are enlisted in the table. Description of Vataja, Kaphaja, and Medoja Galaganda are as follows.

1) Vataja Galaganda

The lakshanas of Vataja Galaganda are toda (pain in the neck region), krishna sira avannadha (blackish veins in the neck), krishna aruna ganda (blackish or reddish mass), meda anvitham (coupled with medas), snigdata (unctuous to touch), arucha (without pain), parushyata (roughness of the mass), chiravidrihi ganda (mass manifests slowly), apaka (no paka), aruchi (tastelessness) and talu gala prashosha (dryness and weakness of throat and palate).

2) Kaphaja Galaganda

The lakshanas of Kaphaja Galaganda are sthira ganda (compact mass in the neck), savarnavat (same as body color), alpa ruk (little pain), ugra kandu (more itching), seetha (cold to touch), mahan ganda (large mass), chirabhidrihi (manifests slowly), paka (paka present), madhuraasyata (sweetness in the mouth), talu gala pralepa (coating in the palate and throat) and kandu (itching).

3) Medoja Galaganda

The lakshanas of Medoja Galaganda are snigda (unctuous to touch), mrudu (soft), panduvarna (yellowish), durganda (bad smell), avedana (no pain), pralambhate (hanging), dehanurupa kshaya, vidrihi (when body grows, mass grows and vice versa), snigdaasyata (unctuous in the mouth), aspashtasabdavat (irregular voice), swasa (difficulty in breathing) and swara sada (hoarseness of voice).

Galaganda Samprapti

1. Sankhya Samprapti of Galaganda - There are three varieties of Galaganda are mentioned in all the classics except Charaka. They are Vataja galaganda, Kaphaja galaganda, and Medoja galaganda.

2. Vikalpa Samprapti of Galaganda- In Galaganda the Doshas involved are Kapha and Vata. The aggravating factors of them are Seeta, Snigda, guru, manda etc

3. Pradhanya Samprapti of Galaganda - The Samprapti caused by a major or independent Dosha is called as pradhanya samprapti, and that which is caused by a minor or dependant Dosha is called as apradhanya Samprapti. Also it can be understood as the Samprapti of swatantra vyadhi is called as pradhanya Samprapti.

4. Bala Samprapti of Galaganda The strength of a disease is depending upon the Nidana, purvarupa, and rupa and manifest disease in total. Here almost all patients had the symptoms manifested completely. So the bala is more

5. Kala samprapti - It is the Samprapti which confirms the role of a particular Dosha in a disease, which can increase the same with the change in time- like the day, night, season, with stages of digestion etc. Here the main Dosha is Kapha and there is involvement of Vata in it. At the same time there is the involvement of Agni; i.e. is the derangement of Agni bala is present. So according to the condition it may vary. No specific time, season, and stages of digestion are provoking this disease.

Samprapti Ghatakas

- Dosha : Kapha, Vata
- Dushya : Medas, Rakta, Rasam
- Srotas : Medovaha, Raktavaha, Rasavaha
- Agni : Jataragni, Dhatwagni
- Ama : Jataragnimandya, dhatwagnimandya
- Rogamarga : Bahya Roga marga
- Udbhavastanam : Amashaya
- Vyaktasthanam : Gala pradasha

Sadhyasadyata

The physician who knows the difference between curable and incurable diseases and begins the treatment in time with a through knowledge of the case succeeds in his efforts without fail. So the physician, who knows the avasthas of the disease, can plan the treatment and can reject the cases, which are incurable. The sadyasadyata of Galaganda is mentioned in Susruta Samhita and are enlisted here.

1. Kruchra Swasa - severe difficulty in breathing
2. Softness of the body parts
3. Aruchi – tastelessness
4. Ksheena gatrata – emaciated body and
5. Bhinna swara – broken voice

Upadrava (complications)

Upadrava is produced after the formation of main disease and it is dependent on the main disease. Upadrava can be major or minor. It is a secondary disease or complication, produced by the same Dosha it responsible for the formation of main disease.

Susruta also opines that upadrava is a super added disease for which the basic causes, i.e. the Dosha responsible is the same as in the main disease. The upadravas of Shopham are swasa, daha, balakshaya, jwara, chardi, aruchi, hikka, atisaram, kasa. The upadravas of Galaganda are not mentioned in any Samhitas.

Galaganda Chikitsa

- **Principles of treatment:-** The main principle of the treatment is the pacification of Kapha and Vata Dosha. As per Susruta the sequence of the treatment is as follows

- **Vataja galaganda-** Nadisweda,- Raktamoksha, - Vranashudhi – Lepanam Firstly the vataja Galaganda patient should be given swedanam with vatahara drugs then the rakta mokshana should be done. The vrana shuddhi is carried out. Then lepanam with shana, atasimoola, shigru, priyala, punnarnava, arka etc.
- **Kaphaja galaganda** –Nadisweda, Upanaha sweda, Rakta bokshanam, then Lepanam. The procedures Vamanam, Shirovirechana, and Dhumapana are also usefull.

The Kaphaja Galaganda patients should be given Nadi and Upanaha swedam After good sweating rakta mokshana is carried out. Then Lepanam with Kaphahara drugs, and Palashaksharam Pippalyadi gana thailam is to be taken internally with Saindava lavana. The procedures Vamana, Shirovirechana and Dhumapana etc should be carried out accordingly. If it becomes paka then treat like Vranam.

- **Medoja Galaganda** - Shareera snigdada should be done firstly-Sira vedam of the Urumoolam– Lepanam. The Medoja Galaganda rogi should be given good Snehana of the shareera. Then the Siraveda in the Urumoola is done. after that Lepanam with Arka, Syama, Lohapureesha, Rasanchanam Danti etc should be pasted and applied. Salasaradi gana kwatha +Gomootram should be taken internally daily. If the ganda is big in size, then surgery should be done. i.e., Ganda should be incised and the dushta medas is cleared off and stiched. or Agni karma with heated Majja, Ghrita, Medas, Madhu etc, after samyak yoga madhu, ghrita should be applied. Annabhedhi, Thutham Gorochnam etc should applied.

Shamana oushadhies

- i. Kanchanara guggulu
- ii. Amrutadi thailam
- iii. Jalakumbhi bhasmam
- iv. Aparajita ghritam
- v. Tumbhi thailam
- vi. Tikta alabu thailam
- vii. Mandoora bhasmam
- viii. Asanadi choornam
- ix. Ajagandhadi lepam
- x. Kshara thailm
- xi. Varanadi kashaym
- xii. Nimbadi thailam
- xiii. Bharngi moola kashayam
- xiv. Sakhoshtakadi thailam

Pathyapathyam

Always the Galaganda rogi should take Triphala and eat Yavannam.

- Pathya Ahara:- Mudgam, yavam, triphala, iodized salt, fruits rich in vitamins, iron etc, kodrava, shundi, nimba.
- Pathya Vihara- Swedanam, Rakta mokshanam, Vamanam.

- Apathya Ahara:- Amlam, madhauram, gudam, dadhi, vasa, ksheera, ghritam, pishtham made of rice and other guru aharas etc, madhyam, anoopa mamsam. Goitrogens such as Cabbage, kale, turnips, Brussels, and vegetables of Brassica family.
- Apathya Vihara- Divaswapnam, maidhunam, avaak sayyam, smoking.

CONCLUSION

- Galaganda (goiter) is a serious multi-systemic metabolic disorder, which has its effects on the daily routine one's life.
- The Galaganda mentioned in Ayurveda can be compared with goiter in the contemporary science by the similarity of some symptoms like swelling, kandu, vivaranta, difficulty in breathing etc.,
- The Galaganda is a sophapradana Vyadhi, the vishashana of Kapha Dosha is the main cause of it. There is involvement of Vata and medus in the pathogenesis of Galaganda.

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