



REVIEW ARTICLE

A CONCEPTUAL REVIEW ON POTHAKI (TRACHOMA)

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Abstract:

Pothaki is the diseases of eye lid, having multiple pidakas (follicles) resembling red mustard seeds or white mustard seeds originate in the eye lid due to vitiation of kapha dosh. It is the kapha predominant disease. The disease can be managed by lekhana anjana, lekhana karma (~ scraping) etc. The clinical features and management of pothaki closely resembles the trachoma. Trachoma is a chronic keratoconjunctivitis, primarily affecting the superficial epithelium of conjunctiva and cornea simultaneously. The incidence of disease is reduced remarkably after introducing the sulfonamides but it is still one amongst the causes of preventable blindness in the world. The management of the disease can be done with topical and oral administration of antibiotics.

Keywords: Pothaki, trachoma, lekhana karma, antibiotics.

Introduction

The last few decades have shown that social and economical factors have much influence on the health as medical interventions. The study of disease is really the study of man and his environmental factors; hence the key to man's health lies largely in his environment. Health is a multifactorial. The factors which influence the health lie both within the individual and externally in the society in which he or she lives. These factors will interact and these interactions may be health promoting or deleterious¹. The timely and sustained delivery of effective health interventions to communities in developing countries is one of the greatest challenges in global health. Millions of the world's poorest

citizens continue to be afflicted by bacterial, viral, and parasitic infections that have persisted².

The eye lids are mobile tissue curtains which gives protection and rest to the eye ball and also site for pathogenesis called diseases of lids. Pothaki is one amongst the diseases manifesting at the eye lid³

The unwholesome conjugation of sense organs with objet (Asatmyeindriyartha samyoga), intellectual blasphemy (pragnaparadha) and transformation (parinama) are the root causes of all disease⁴. The above three factors are very important in preventive and curative aspects. Astasthana pareeksha (eight procedures of examination)⁵, dashavidha pareeksha (ten procedure of

examination)⁶, panchaindriya pareeksha (examination by sense organs)⁷, etc are unique contribution of ayurveda to assess the severity of disease and condition of patient.

Trachoma is a chronic keratoconjunctivitis, primarily affecting the superficial epithelium of conjunctiva and cornea simultaneously⁸. It caused by Chlamydia trachomatis, but other pathogenic microorganisms or secondary infections may increase the severity of the disease. Trachoma inflammation may undergo spontaneous resolution or may progress into conjunctival scarring which can cause trichiasis or entropion leading to abrasion on the cornea by eyelashes frequently resulting into corneal ulceration, followed by scarring and loss of vision⁹. In the early period researchers have tried and today also continuous efforts are being made to eradicate trachoma from the nation and then from whole world, because it is such a type of eye disease which pushes the patient into the dark world if proper measures are not taken in a early period of infection.

Derivation & definition of pothaki

The word pothaki is derived from the root 'puth' meaning to injure suffixed by pratyaya 'nuk' makes the word pothaki, feminine of which becomes pothaki. According to Siddhanta-Kaumudi the pidikas which are due to kapha dosh, resembling red mustard seeds and having the nature of spreading in the whole eye lid is known as pothaki.

Aetiology of trachoma

No separate etiological factors have been mentioned for the diseases of eye lid. Sushruta has described the etiological factors in general for all the eye diseases and these are also considered as the causative factors of pothaki (trachoma). Acharya Vagbhata explained the same with especially intake of drugs which have bad effect on the eyes (acakshushya dravya) are responsible for eye diseases¹⁰. Caraka's three varieties of aetiology for all diseases in general out of which the unwholesome conjugation of sense organs with objet¹¹ (asatmya-indriya-arth-

samyoga), deals with the disuse, misuse and perverted use of eye which seems to be responsible factor for eye diseases.

According to acharya Sushruta some of the etiological factors are diving into water after exposure to heat, excessive looking at distant objects, sleeping during day/awakening at night, excessive weeping, anger/grief, injury to head, excessive use of sour, gruel and vinegar and horse gram pulses, Suppression of natural urges¹² etc.

Predisposing factors

The infection is usually contracted during infancy and early childhood. Otherwise, there is no age bar, As far as sex is concerned, there is general agreement that preponderance exists in the females both in number and in severity of disease. No race is immune to trachoma, but the disease is very common in Jews and comparatively less common among Negroes. The environment does not seem to have a definite influence on the trachoma because it is common in hot country such as Egypt and cold country like Poland and Finland¹³. However trachomatous incidence seems usually in the hot months of the year. Trachoma in some extent is associated with dry and dusty weather.

The disease is more common in poor classes owing to unhygienic living conditions, overcrowding, unsanitary conditions, abundant fly population, paucity of water, lack of materials like separate towels and understanding about spread of contagious diseases. Like exposure to dust, smoke, irritants, sunlight etc. increase the risk of contracting disease. Therefore, outdoor workers are more affected in comparison to office worker¹⁴

Routes of transmission

1) Direct: These modes of transmission are commonest in endemic communities and include personal contact, eye-to-eye spread, finger spread e.g. while playing or sharing a bed. Direct spread suggests that the disease commonly clusters in families and villages. The spread within the communities depends on close and prolonged contact

2) Fomites as carriers: Indirect inanimate objects e.g. shared towels and clothing can act as a source of the infective organism.

3) Coughing or sneezing: *C. trachomatis* can be found in the nasopharynx and external nasal exudates, observations reveal that sleeping in the same room with an active case is an important risk factor for spread of trachoma¹⁵

4) Eye-seeking flies: In endemic trachoma regions, flies feed on the mucus and nasopharyngeal discharge of children's faces and it may transform the infection of trachoma.

The predominant modes of transmission in endemic communities may vary based on different environmental conditions, cultural factors and personal and community attitudes that determine the prevalence of trachoma.

Comparison between Pothaki and Trachoma

An attempt has been made to compare the disease pothaki - trachoma from all aspect described in ayurveda and other allied sciences.

1. With derivation: The word pothaki is derived from the root puth, meaning of which is to injure. In trachoma injury to eye by

scarification (corneal ulcers, opacities, etc.) is main feature.

2. With definition: In the definition of pothaki as described in Siddhanta Kaumudi – “having the nature of spreading in the whole eye lid” very nearly resembles trachomatous follicles which are also having the nature of spreading in the whole eye lid.

3. With etiology: Amongst etiologies pothaki and trachoma have two common etiological factors -smoke and dust¹⁶⁻¹⁷

4. With clinical features The signs and symptoms described for pothaki by Sushruta, Vagbhata and others resembles trachomatous signs and symptoms - the first sign i.e. pidaka¹⁸ are very similar to trachomatous follicles, kandu, srava, shophha, upadeha are same as that of trachomatous itching, lacrimation, swelling in lids and discharge respectively.

5. With treatment: Lekhana is the treatment for pothaki¹⁹, in trachoma antibiotics are being mentioned but it's to control infection and not for trachoma itself. In chronic condition trachomatous follicles, concretions can be removed by scraping. By these instances pothaki is being compared to trachoma.

Clinical features	Factors responsible clinical feature
Srava (~Discharge)	Infection and type of microorganism may responsible for discharge
Guruta (~Heavyness)	May due to accumulation of epithelial debris at conjunctiva (Concretions) and inflammation which produces swelling of lids.
Ruja (~Pain)	Due to concretions or complications of the disease Trachoma. e.g. tricheasis, corneal ulcers etc
RaktSarshapavata Pidaka(~Papillae of trachoma)	Papillary stage of disease
Sweta Sarshapavata Pidaka (~ Follicales)	Follicular stage of disease
Shophha(~ Swelling)	It indicates the inflammatory and infectious condition of the disease Pothaki- Trachoma
Upadeha (~Sticky discharge)	Super added secondary infection may responsible for this type of stickiness of lids associated with discharge
Picchila ashru (~sticky discharge)	Corneal irritation and secondary infection may leads to this

	clinical feature
Kandu (~ itching)	It may due to superadded bacterial or other infection to conjunctiva

Table: 1 Showing Clinical features & Factors responsible clinical feature

Pathogenesis of pothaki (trachoma):

General samprapti (pathogenesis) described by acarya Sushruta for netra roga is also applicable to disease pothaki. But the brief explanation is given while explaining the diseases of the eye lid. When the vitiated doshs in combination or individually enter into the vessels of eye lid further vitiation occurs due to Khavaigunya (~ obstruction) at eye lid resulting in increase of mamsa (~ flesh) and rakta dhatu (~ blood) and then quickly produce diseases of eye lid²⁰.

According to Sushruta each and every disease passes through series of changes during its manifestation. This is known as six stages of pathogenesis²¹ (Shad Kriyakala). For better understanding the disease pothaki the discussion on these six stages has been made and is as follows.

Sanchaya avastha:

This is a stage where accumulation of deranged doshs occurs due to vitiation resulting from various vitiating causes of respective doshs²². In case of the disease pothaki one may have the experience of local symptoms like feeling of heaviness in eye lid without any clear symptoms of the disease.

Prakopa Avastha:

When the provoking factors are allowed to act further, the previously accumulated doshs get irritated, they undergo the state of melting and in turn ready to leave their site. This stage has been compared by well known commentator Dalhana to the analog of melting of ghee²³. In case of the disease pothaki patient experiences pain in the eye along with burning sensation.

Prasara Avastha:

Again the provocative factors are allowed to continue the vitiated doshs start to melt and over flow their primary sites²⁴. When they come out from their seats they start to move under the influence of vata. In this stage disease lies in the dormant state with a feeling of vague symtomatology. Though the disease will be produced only in that body component or viscera, where these vitiated circulating doshas will get favourable atmosphere. In case of pothaki disease one may suffer from lacrimation, itching, burning sensation, etc.

Sthanasamshraya Avastha:

This is the stage of localization of disseminated doshas in a tissue or organ where defence mechanism is weak²⁵. In the stage of sthanasamshraya svastha, accumulation of dosh in a particular organ or tissue is much more. During this stage the vitiated doshs enter individual cell of a tissue or organ and affects its normal functioning mechanism, in this stage patient gets symptoms like raga, shopha, etc.

Vyakta Avastha:

When the vitiated doshas get accumulated in excess and causes significant damage to the tissue or organ. The disease manifests with a definite clinical features²⁶. Where as in this disease follicles, thick discharge occurs and all the symptoms become more prominent. But there is no classification given according to doshs in classics. Here the stage of Trachomatous inflammation-follicular (TF) and Trachomatous inflammation intense (TI) can be included in this kriyakala as the established clinical findings are prominent.



Fig: 1 Showing trachomatous inflammation-follicular (TF) & trachomatous inflammation intense (TI)

Bheda Avastha:

This is the stage where the process of vitiation may either come to an end, become chronic or may spread to the distant parts of the body²⁷. In other words it is the stage which gives an idea of complications as well as prognosis of the disease. In case of pothaki

one can easily conclude that the disease is with complications and chronic in nature. In stage trachomatous scarring (TS), trachomatous trichiasis (TT) and corneal opacity (CO) can be included. The disease becomes chronic if adequate treatment modalities are not available in early stages.

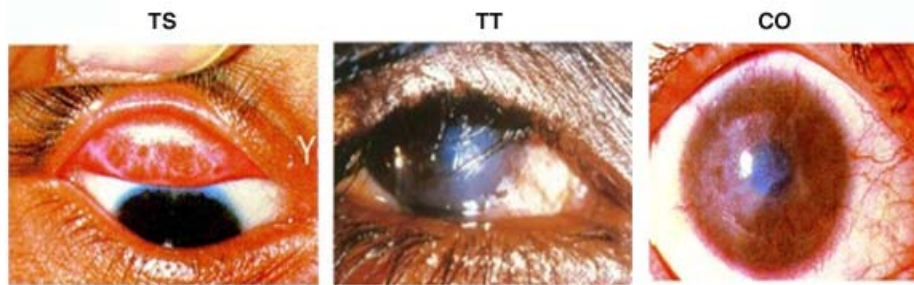


Fig: 2 Showing trachomatous scarring(TS),trachomatous trichiasis(TT)&corneal opacity (CO)

Samprapti ghataka:

The entities involved in manifestation of pothaki are as follows-

Dosh – kapha pradhana tridosh

Dushya – blood, flesh

Srotus – raktavaha, mamsavaha

Srotodushti-sanga(~obstruction), vimargamana

Adhishthana – eye lid

Sadhyasadyata – Curable

Trachoma will be self limiting or progressive, the later type begins with suppurative stage to deeper tissue involvement, lymphoplasmocytic infiltration and the formation of lymphoid follicles. The

upper limbus of the cornea and the upper tarsal plate tend to be most severely involved by epithelial hyperplasia and follicular hypertrophy. Soon the conjunctiva ulcerates, and penetration into the cornea leads to pannus formation, fibroblast ingrowths, scarring and eventual blindness²⁸. The Clinical profile of Trachoma as per WHO can be included in the different stages of Kriyakala as discussed above.

Diagnosis

The diagnosis of pothaki (trachoma) in routine clinical practice is mainly based on the clinical features. Examination of eye for the clinical signs of trachoma involves careful inspection of the lashes and cornea, then eversion of the upper lid and inspection of the

upper tarsal conjunctiva. Clinical diagnosis is best made from a history of living in a trachoma- endemic environment.

Management of pothaki (trachoma)

The two main objectives of ayurveda are to protect the health of healthy and to alleviate disorders in the diseased. Treatment of eye diseases also holds above two points simultaneously.

Principles

Treatment in prodromal stage:

Acharya Sushrutan in utara tantra after describing the prodromal symptoms of eye diseases advised to stresses the treatment at this stage otherwise the disease becomes prominent in successive avastha (~ stages)²⁹. In this stage it is necessary to avoid etiological factors which were responsible for manifesting the disease and medicaments for the alleviation of the provoked tridosha to bring the normal stage i.e. kriyayoga.

Specific treatment of pothaki:

Sushruta has mentioned lekhana karma (~ procedure of scraping) with preoperative, operative and postoperative regimes. In case of failure by lekhana karma blood letting with medicinal leech is advised. After the blood letting scraping must be repeated. Acharya Vagbhata has described management of pothaki by lekhana, pritisarana, sechana, aschyotana and anjana and considered pothaki is one amongs Pilla roga. In the management of Pilla roga Vagbhata advocates snehana, vamana, siravyadha and virecana. After all these procedure lekhana karma is to be done repeatedly with intermittent treatment of application of medicinal leech.³⁰⁻³² if needed accordingly vidalaka, anjana, praksalana and sweda are to be done.

The incidence of pothaki – trachoma is reduced remarkably after introducing sulphonamide group of drugs still it is not eradicated completely. In clinical practice drugs like the tender leaves of Amra (*Mangifera indica* Linn) and leaves of Jambu (*Syzygium cumini* Linn) should be boiled and

decoction should be used as an eye drop or the decoction of pericarp of haritaki (*Terminalia chebula* Retz), pericarp of bibhitaki (*Terminalia bellerica* Roxb), pericarp of amalaki (*Phyllanthus emblica*) and bark of kadhira (*Acacia catechu* Wild) mixed with honey can be used as an eye drop. Application of Chandrodaya varti, leaves of Shigru (*Moringa olifera* Lam) juice with honey have shown effective against treating the pothaki (trachoma). If the follicles and papillae are bigger in size not responding to medical management then surgical intervention e.g. procedure of scraping with sharp instrument will be employed. It gives better result in managing the disease pothaki(trachoma)

Current management

Management of trachoma should involve curative as well as control measures.

1. Treatment of active trachoma:

Antibiotics for the treatment of trachoma may be given locally or systemically but topical treatment is preferred because it is cheaper, no risk of systemic side effects, local antibiotics are also effective against bacterial conjunctivitis which may be associated with the trachoma.

Global elimination:

The identification of feasible and effective methods for trachoma control the WHO launched a programme in collaboration with a number of the larger non-governmental development organizations (NGDOs), a new initiative in 1997 for the global elimination of blinding trachoma by the year 2020 based on the "SAFE" strategy: **S** - Surgery for trichiasis; **A** - Antibiotics for the treatment of active (inflammatory) trachoma and for the elimination of the reservoir of infection; **F** - Facial cleanliness to reduce transmission between children; and **E** - Environmental improvement to reduce fly populations.

Conclusion:

The disease pothaki explained in ayurveda closely resembles the trachoma in its clinical features. The different stages of potaki will be explained based and the six stages of

pathogenesis (shadvida kryakala). The early detection of the trachoma and its management will help to control the spread of disease. The principles of management explained in the both the sciences were similar.

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