

A REVIEW ARTICLE - VRANASHOPHA IN AYURVEDA

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ABSTRACT

Acharya Sushruta who is known as the '**Father of Surgery**' was well aware about importance of *Vranashopha* (stages of abscess formation), *Vrana* (wound) and their management in surgical practice, along with its untimely and untreated complications. The *Vranashopha* is described as earlier phase of *Vrana*. *Sushruta* has mentioned detail description of inflammatory swelling under the heading of *Vranashopha*. *Shatkriyakala* was explained for the first time in this context by *Acharya Sushruta*. Edema is explained as *Shotha* or *Shopha* in Ayurveda. We come across the Edema conditions in different local areas such as face, feet, through the body or half of the body. Even though it usually appears as a symptom, in so many diseases related to vital organs like kidney, liver, heart, lungs, brain etc. It is condition which is characterized by fluid retention in body's tissues which results in swelling. Painless swelling of feet & ankles is common problem. Abnormal build up of fluid in ankles, feet & legs can cause swelling. This fluid build up swelling called Edema¹.

Keywords: *Sushruta*, *Vranashopha*, *Vrana*, *Shatkriyakala*, Inflammation, Edema

INTRODUCTION

Shotha, *Shvayathu* and *Shopha* are the synonyms that denote an unnatural elevation of a part or whole of the body. *Shotha* (Swelling) as a clinical entity was very well known since from the samhita period of Ayurvedic literature. Detailed description of *Shotha* along with classification, symptomatology, complication and management is explained in *Charaka samhita*. The surgical aspects about *shopha* (inflammatory swelling) and *Vrana* (wound) is well explained in *Sushruta samhita*. *Acharya Sushruta* a surgical man defined *Shopha* as localised swelling in a part of body involving the skin and the underlying flesh which may be even or uneven, massive and

knotty in consistency. Again he cautions that differentiation should be made from other clinical entities as glandular enlargements, abscesses etc. which are also associated with a swelling². *Shopha* described by *Sushruta* is analogous to inflammatory swelling in many respects. *Shopha* is that which exists before *Vrana* (wound) . *Acharya Madhava* for first time introduced the new entity of *Vranashotha* as inflammation as a separate chapter. According to *Charaka* when vitiated *Vata* comes in contact with vitiated *Rakta*, *Pitta* and *Kapha*, it brings them to the periphery then the *Srotas* (channels) get obstructed to develop *Shotha* in and around the skin and the

flesh but it is not limited to part of the body³.

Bheda - Classification of shopha

According to *Charaka*: Even though all the three *doshas* involved in the manifestation of all the types of the *Shohta*, it is on the basis of the predominance of the respective *Doshas* that *Vataja*, *Pittaja* and *Kaphaja* varieties of disease are determined and therapies are prescribed accordingly. All the varieties of the *Shohta* are considered to be *Tridoshaja* i.e. they are caused by the vitiation of all the three *Doshas* even so the causes of inflammation differs from one to another according as the particular *Dosha* which is predominantly vitiated. The physician should therefore determine the line of treatment according to the predominance of one *Dosha* or the other.

- 1) On the basis of *Dosha* a) *Vataja* b) *Pittaja* c) *Kaphaja*
- 2) On the basis of *Karana* a) *Nija* b) *Agantuja*⁴

- 3) On the basis of *Sthana* a) *Ekganga* b) *Sarvangaja*⁵

According to *Sushruta*: *Sushruta's* diagnosis was based on clinical observation of *Shopha* (inflammatory swelling) during those days. He mentioned six kind of examination that includes using of all five senses and interrogation⁶. He mentioned six types of *Shopha* as *Vattika*, *Paittika*, *Kaphaja*, *Shonita*, *Sannipattaja*, *Agantuja*⁷.

According to *Vagbhata and Madhavakara*: Based on different causes and symptoms it is of nine types from each *Dosha* separately, from the combination of two *Doshas* and from the combination of all them, from trauma/injury and from the poison. Mainly, it is of two types:

- a) *Nija*, *Agantuja*
- b) *Sarvanga*, *Ekanga*, It is known to be of three types a) *Prthu* (*hard*) b) *Unnata* (raised/elevated) c) *Grathita* (glandular)⁸

Table 1: Types of *Shopha* and their characters

Si. No	Type of shopha	Colour	Consistency	Pain
1	<i>Vattika</i>	Blackish or reddish	Indurated or soft	Fleeting and pricking
2	<i>Paittika</i>	Yellow or angry red	Soft and quick spreading	Burning
3	<i>Kaphaja</i>	Pale or white	Indurated, greasy, cold, slow to spread	Mild pain an itching
4	<i>Shonita</i>	Very black	As <i>Paittika</i>	As <i>Paittika</i>
5	<i>Sannipattaja</i>	Mixed of all <i>Doshas</i>	-	-
6	<i>Agantuja</i>	<i>Lohita</i> (red)	As <i>Pitta</i> and <i>Shonita</i>	As <i>Pitta</i> and <i>Shonita</i>

Samprapti - Aetiopathogenesis of shopha

As it is well known that the imbalanced state of *Doshas* lead to pathogenesis of diseases. Aetiopathogenesis of *Shopha* is much resembled to inflammation in modern medical science. Inflammation is defined as local response of living tissue to any injury caused by any agent. *Acharya Sushruta* perceived that the pathogenesis of *Shopha* has a definite sequential pattern, distributed over six occasions for treatment called *Shatkriya kala*⁹. These are respectively as:

- 1) *Sanchaya* - Accumulation of physiological active *Doshas*.
- 2) *Prakopa* - Excitation of the previously cumula-

tive and imbalanced *Doshas*.

- 3) *Prasara* - Overflowing i.e. excited *Doshas* leave their original site.
- 4) *Sthana samasraya* - Localisation of the wandering imbalance *Doshas* at a site.
- 5) *Vyakta awastha* - Manifestation of *Doshas* in form of disease with sign and symptom.
- 6) *Bheda awastha* - Definite termination of the pathological lesion i.e. abscess.

PURVA RUPA - PREMONITORY SYMPTOMS:

Feeling of increased temperature, burning sensation in eyes etc. and dilatation of the vessels of the locality are the premonitory symptoms¹⁰.

Stages of Vranashopha

When swelling does not subside either by different external and internal treatments, by opposite or improper treatments or great aggravation and accumulation of the *Doshas*, then it goes in for *Paka* (ripen/pus formation). *Acharya Sushruta* has described these in three stages of *Vranashopha*. They are:

1. Amawastha: (early inflammation)

This stage results from the fight between the vitiated *Doshas* and the defending *Dushyas* (*Dhatus*), here in this stage *Kapha dosha* may be prominent due to which a swelling produced¹¹.

- *Mandoshmata* - Mild increase in temperature.
- *Twak savarnata* - Normal skin colouration .
- *Sheta shophata* - Swelling being cold to touch.
- *Sthairya* - Immovable (static).
- *Manda vedana* - Dull pain.
- *Alpa shophata* - Mild inflammation.

2. Pachyamanawastha: (inflammatory stage)

If the vitiated *Doshas* are further allowed to produced more exaggerated phase in which the *Prakupita Pitta* will act upon the *Dushya* to produce disintegration. This stage produced symptoms like as¹²:

- *Suchibiriva nistudyate* - Pinprick like pain.
- Other different kind of pain like bitten, piercing, burning etc.
- With pain like that of a scorpion sting, the patient obtains no relief in standing, sitting or lying down postures. The swelling goes on increasing like a full bladder.
- *Twak vaivarnya* -Discolouration of the skin.
- *Shopha abhivrudhi* - An increase of the swelling.
- *Jwara* - Pyrexia.
- *Daha* - Burning sensation.
- *Pipasa* - Thirst.
- *Bhaktaaruchi* - Loss of appetite, Anorexia.

3. Pakwawastha: (suppuration)

Further in related to *Dosha Dushya Sammurchana* the *Dhatus* are affected and burnt. There is an attempt for absorption (*Shoshana by vayu*) due to which following sign and symptoms are produced as¹³:

- *Vedanopashanthi* - Subsidence of pain.
- *Pandutha* - Appearance of pallor.
- *Alpa shophata* - Decrease of swelling.
- *Vali pradurbhava* - Appearance of wrinkles.
- *Twak pariputana* - cracking of skin
- Appearance of depression / when pressed by the finger and quick elevation.
- Feeling the liquid pus within as the movements of water within the bladder, when it is pressed on one side pressure is felt on other side this is called fluctuation.
- *Kandu* - itching.
- *Toda* - Pricking pain.
- Subsidence of constitutional symptoms occurs.

Shopha Upakrama - Management of Vranashopha

The *Vranashopha* should be managed in early stage to avoid suppuration and more tissue harm as described in stages of *Shatkriyakala*. There are different kind of management is required in different stages of *shopha* like:

- In early stage (*Amawastha*) only Rubbing (*Vimlapana*), Oleation (oil massage), Application of medicated paste (*Alepa*), Poultice (*Upanaha*) are needed for treatment.
- While in supplicative stage (*Pakwawastha*) surgical procedure like Incision (*Bhedana*) etc. are needed for treatment.

Acharya Sushruta described seven pillars for the management of inflammatory lesion (*Vranashopha*) which are as follows¹⁴:

- 1) *Vimlapana* - Light massage or rubbing (to increase the circulation)
- 2) *Avasechana* - Elimination therapy including bloodletting (for the removal of toxins)
- 3) *Upanaha* - Poultice
- 4) *Patana* - Cutting or incision
- 5) *Shodhana* - Cleaning (detoxification)
- 6) *Ropana* - Healing measures
- 7) *Vaikrutapaha* - To restore normalcy to the scar

INFLAMMATION

DEFINITION AND CAUSES

Inflammation is defined as the local response of living mammalian tissues to injury from any agent. It is a body defence reaction in order to eliminate or limit the spread of injurious agent, followed by removal of the necrosed cells and tissues¹⁵. The injurious agents causing inflammation may be as under:

1. Infective agents like bacteria, viruses and their toxins, fungi, parasites.
2. Immunological agents like cell-mediated and antigen antibody reactions.
3. Physical agents like heat, cold, radiation, mechanical trauma.
4. Chemical agents like organic and inorganic poisons.
5. Inert materials such as foreign bodies.

SIGNS OF INFLAMMATION

The Roman writer Celsus in 1st century A.D. named the famous 4 cardinal signs of inflammation as:

- i) Rubor (redness)
- ii) Tumor (swelling)
- iii) Calor (heat)
- iv) Dolor (pain).

To these, fifth sign *functio laesa* (loss of function) was later added by Virchow.

TYPES OF INFLAMMATION

Depending upon the defence capacity of the host and duration of response, inflammation can be classified as Acute and Chronic.

1. **Acute inflammation** is of short duration (lasting less than 2 weeks) and represents the early body reaction, resolves quickly and is usually followed by healing. The main features of acute inflammation are:
 - Accumulation of fluid and plasma at the affected site
 - Intravascular activation of platelets
 - Polymorphonuclear neutrophils as inflammatory cells.
2. **Chronic inflammation** is of longer duration and occurs after delay, either after the causative agent of acute inflammation persists for a long time, or the stimulus is such that it induces chronic inflammation from the beginning. A variant, chronic

active inflammation is the type of chronic inflammation in which during the course of disease there are acute exacerbations of activity. The characteristic feature of chronic inflammation is presence of chronic inflammatory cells such as lymphocytes, plasma cells and macrophages, granulation tissue formation, and in specific situations as granulomatous inflammation.

INFLAMMATORY CELLS

The cells participating in Acute and Chronic inflammation are circulating leucocytes, plasma cells, tissue macrophages and inflammatory giant cells. Polymorphs or neutrophils are the first line of defence against invading agents and perform initial phagocytosis¹⁶.

- Eosinophils participate in allergic conditions, parasitic infestations and certain skin diseases.
- Basophils and mast cells are involved in immediate and delayed type of hypersensitivity reactions.
- Lymphocytes are immunocompetent cells—B cells in humoral immunity and T cells in cell-mediated immunity. Besides, lymphocytes are the dominant cells in chronic inflammation.
- Plasma cells develop from B cells and are immunoglobulinsynthesising cells and are seen in chronic inflammation.
- Mononuclear phagocyte system is comprised by circulating monocytes and tissue macrophages. These are scavenger cells of the body.

Edema

"Edema/Oedema is the medical term for swelling. Body parts swell from injury or inflammation. It can affect a small area or the entire body. Medications, pregnancy, infections, and many other medical problems can cause edema¹⁷".

Edema happens when small blood vessels leak fluid into nearby tissues. That extra fluid builds up, which makes the tissue swell. It can happen almost anywhere in the body.

Types of Edema

- **Peripheral edema**- This usually affects the legs, feet, and ankles, but it can also happen in the

arms. It could be a sign of problems with circulatory system, lymph nodes, or kidneys.

- **Pedal edema**- This happens when fluid gathers in feet and lower legs. It's more common if you're older or pregnant.
- **Lymphedema**- This swelling in the arms and legs is most often caused by damage to lymph nodes, tissues that help filter germs and waste from the body. The damage may be the result of cancer treatments like surgery and radiation. The cancer itself can also block lymph nodes and lead to fluid buildup.
- **Pulmonary edema**- When fluid collects in the air sacs of lungs leads to pulmonary edema. That makes it hard to breathe, and it is worse when lying down. Also may cause fast heartbeat, feel suffocated, and cough up foamy spittle, sometimes with blood.
- **Cerebral edema**- This is a very serious condition in which fluid builds up in the brain. It can happen if a blood vessel gets blocked or bursts, or have a tumor or allergic reaction.
- **Macular edema**- This happens when fluid builds up in a part of eye called the macula, which is in the center of the retina, the light-sensitive tissue at the back of the eye. It happens when damaged blood vessels in the retina leak fluid into the area.

Causes of Edema

- Things like a twisted ankle, a bee sting, or a skin infection will cause edema.
- Allergic reactions.
- Obstruction of flow.
- Congestive heart failure .
- Liver disease such as cirrhosis.
- Pregnancy- Mild leg edema is common during pregnancy. But serious complications of pregnancy like deep vein thrombosis and pre eclampsia can also cause edema.
- Head trauma.
- Medications- Many medicines can cause edema, including:
 - NSAIDs (such as ibuprofen and naproxen)
 - Calcium channel blockers

- Corticosteroids
(like prednisone and methylprednisolone)
- Pioglitazone and rosiglitazone
- Pramipexole

Symptoms of Edema

- Edema in a small area from an infection or inflammation (like a mosquito bite) may cause no symptoms. On the other hand, a large allergic reaction (such as from a bee sting) may cause edema on your entire arm that can bring pain and limit your arm's movement.
- Food allergies and allergic reactions to medicine may cause tongue or throat edema. This can be life-threatening if it interferes with your breathing.
- Leg edema can make the legs feel heavy. This can affect walking. In edema and heart disease, for example, the legs may easily weigh an extra 5 or 10 pounds each. Severe leg edema can interfere with blood flow, leading to ulcers on the skin.
- Pulmonary edema causes shortness of breath and sometimes low oxygen levels in the blood. Some people with pulmonary edema may have a cough.

Pitting edema and non-pitting edema:

There may be an indent or a "pit" that remains for a while after push on the skin in some types of edema, this is called pitting edema. If the tissue springs back to its normal shape, it's called non-pitting edema.

Treatment of Edema

- ❖ To treat edema, often must treat its underlying cause. For example, taking allergy medications to treat swelling from allergies.
- ❖ Edema from a block in fluid drainage can sometimes be treated by getting the drainage flowing again. A blood clot in the leg is treated with blood thinners. They break down the clot and get drainage back to normal. A tumor that blocks blood or lymph can sometimes be shrunk or removed with surgery, chemotherapy, or radiation.

- ❖ Leg edema related to congestive heart failure or liver disease can be treated with a diuretic like furosemide (Lasix).

DISCUSSION

The *Vranashopha* is described as earlier phase of *Vrana*. *Sushruta* has mentioned detail description of inflammatory swelling under the heading of *Vranashopha* which has 3 progressive stages. These are *Amawastha* (just early stage of inflammatory process), *Pachyamanawastha* (true inflammatory stage) and *Pakwawastha* (suppurative stage) respectively. Further he described six types of *Vranashopha* as; *Vattika*, *Paittika*, *Kaphaja*, *Shonita*, *Sannipattaja*, *Agantuja*. He described their description according to color, consistency, pain and other symptoms. *Shatkriyakala* is explained in this context by *Acharya Sushruta*. He perceived that the process of the pathogenesis has a definite sequential pattern, gives an idea about the consecutive stages of the disease and accordingly preventive measures were described to overcome complication. Sixty procedures for management of *Vranashopha* (inflammatory swellings) and *Vrana* (abscess or wound) was told by *Sushruta*. Out of these first eleven from *Apatarpana* to *Virechana* were mentioned for *Vranashopha* specially. It is very important to know all about *Vranashopha* as treatment in this stage can prevent hazardous complications occur by infected wound and to prevent from further damage to the body.

CONCLUSION

Vranashopha has been widely explained by different *Acharyas* but *Acharya Sushruta's* concept is appropriate for diagnosis and treatment as per surgical aspect. Diagnosis according to progressive stages is very beneficial for treating the *Vranashopha*. He explained "if the *Doshas* are eliminated in *Sanchyavastha* itself, they do not progress to the further stages of pathogenesis, otherwise in the later stages it would become more and more potent (harmful)¹⁸. So the treatment of inflammation should be done in early stage before

it converting into an abscess".

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