

SHASTRAKARMOTTAR SHOOL (POST OPERATIVE PAIN) AND ITS MANAGEMENT

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ABSTRACT

Ayurveda has not only considered *shool* as a symptom but also an independent disease. Acharya Dalhana commented on *shool* as it is a type of pain, which is similar to the pain, produced by penetrating a nail or any pointed or conical object. There are some approaches to pain measurement. In ayurveda there are some indigenous drugs which acts as analgesics mentioned in Charak Samhita, Sushrut Samhita like *Shrungver*, *Pippali*, and *Ajmoda* etc. But there is scope for more research on these herbal drugs to evaluate their analgesic effect.

Keywords: *shool*, pain, *vata dosha*, visual analog scale.

INTRODUCTION

The international association for the study of pain(IASP) defines pain as ‘an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in term of such damage’. Pain is indispensable part of our life since existence of human being on the earth. Pain is a commonest symptom with extraordinary complex sensation which is difficult to define and measure in an accurate, objective manner. Pain is a subjective and multidimensional experience. Pain is the most common symptom that brings patients to see a physician and it is the basic and most challenging problem for surgeons from primitive era. Management of post operative pain has been a global challenge since the inception of surgical procedure. Number of operative procedures in today`s era are increased irrespective of age and sex because of sophisticated and advanced methods in surgery and safe anesthesia. There are many dis-

eases which are curable only with operative procedures. Patients become panic due to pain after any operation. The primary requirement of safe and satisfactory surgery is to abolish the pain peri operatively and post operatively. General or spinal anesthesia effect is only for three to four hours after operative procedure. Then patient will feel pain at operative site which is unbearable sometimes. Pain is a discarded affective state brought into being by chemical or mechanical changes in various tissues. Pain is a complex experience consisting of a physiological (bodily) response to a noxious stimulus followed by an effective (emotional) response to that event. Pain is a warning mechanism that helps to protect organisms by influencing it to withdraw from harmful stimuli. It is primarily associated with injury or the threat of injury, to bodily tissue. Post operative pain is no avoidable thing in surgery. The treatment of post operative pain will

result in real benefits to the patients and surgical units. Inadequate post operative pain relief may result in clinical and psychological changes that may increase the morbidity and mortality as well as the cost of treatment as a whole, in addition to decreasing the quality of life post operatively⁽¹⁾. It is observed that up to 50% of patients may develop chronic post operative pain including minor depression and pain related catastrophizing⁽²⁾. Hence a distinct element of chronic post surgical pain is described, which is related to biopsychosocial factors⁽³⁾. The depression, psychological vulnerability stress and late return to work are closely related to chronic post surgical pain. This chronic post surgical pain is not only observed following a major surgery but can be seen after a minor procedure. Although pain has a purpose in the wider evolutionary sense, it is a largely inappropriate maladaptive response in the post operative period, which is associated with stress and systemic complication like pulmonary, cardiovascular and gastrointestinal. Uncontrolled pain may cause struggling, crying and restlessness this can result in hematoma formation and thereby delay in wound healing. Adequate pain control leads to decreased manipulation of the surgical site and thus reduces swelling, hematoma formation and infection. So it is necessary to control post operative pain. Pain management (pain medicine or algia) is a branch of medicine employing an interdisciplinary approach for easing the suffering and improving the quality of life of those living with pain

Ayurved view: Ayurveda considers pain as both a disease and a symptom. In Ayurvedic classics pain can be referred to *shool*, *vedana*, *ruja*, *ruk* etc. Acharya Dalhana commented on *shool* as it is a type of pain, which is similar to the pain produced

by penetrating a nail or any pointed or conical object. Acharya Sushruta while describing the definition of *shalya*, said that the factor which causes *badha* (unpleasant sensation) to *shareera* (body) and *mana* (mind). Acharya has highlighted *badha* to *mana* which suggests about the term psyche which is gaining importance nowadays⁽⁴⁾. While describing the causes of pain Acharya has quoted vitiation of *vata dosha* as the primary cause which may be better correlated to neurological response to various degree of abnormal stimulation⁽⁵⁾. Acharya has clarified that *marmaghata* (vital area injury) causes severe *vata prakopa* and leads to severe pain⁽⁶⁾. Acharya Sushruta identified pain as usual consequence of surgical procedure and also gave few more reasons for pain in the post operative period like 1) Pain as a usual consequence of surgical procedure⁽⁷⁾. 2) Pain as a result of faulty technique by surgeon. 3) Pain as a result of improper post operative regimen by patient. As pain influence psychological wellbeing of the patient hence it is important to assess about the vulnerability of the patient to pain prior to the surgery and after surgery. This is effectively taken care by Acharya Sushruta through assessing the mental strength and pain threshold of the patient. Patients with *satwa* and *pranaprabalya* can tolerate stress and pain of various procedures much better than other patients. This assessment may help in reducing the dose of analgesics. This suggests about the fine assessment about the psychological component involved in the pain. Acharya Sushruta being a surgeon was well aware of significance of pain and its management in surgery. One of the techniques i.e. *Madyapana* (consumption of alcohol) which lay down revolutionary step in the development of currently established branch of Anaesthesia. Acharya Su-

shruta has given validated explanations regarding the concept of pain; and practiced different techniques to tackle the pain. These various methods of pain management paved a way to the establishment of new branch called as Anesthesiology. Pain clinic is the currently upcoming OPD which is managed by anesthetist.

Being subjective feeling intensity of pain differs from individual to individual, time to time, site to site. It depends greatly upon susceptibility of mind. Acharya Charak says that health is happiness and disease is pain. On the same basis life also has been classified into two broad divisions, sukha and dukha (happiness and pain). But all are suggestive about the discomfort or an unpleasant feeling caused due to various etiologies like inflammatory origin, neurological origin, vascular origin etc⁽⁸⁾. These all can be prevented by the finer assessment of disease through pain factor. Pain as a diagnostic aid-Pain anywhere in the body is always suggestive of injury either at the level of tissues or at the cellular level. Presence of which is considered for diagnosing the *shalya* (antigen) which could be either visible or invisible cause. Pain as post operative complications-It is known fact that the surgery is stressful process where finer assessment is required to get pain free post operative period and which is discharge criterion too. As prognostic factor-Prognosis of the certain conditions was made on the basis of presence and absence of pain factor by Acharya Sushruta which is proved by in the following references like if healthy wound presents with pain it indicates secondary infection which hinder the healing similarly in unhealthy wound if pain subsides which indicates disinfection of the wound and it is progressing towards healing. In both the cases it suggests about the prognosis of the wound. So, sudden onset

or the disappearance of the pain in certain surgical conditions proves most prognostic significance. This kind of assessment increases the success rate of surgical management.

Assessment of pain⁽⁹⁾-Pain assessment is a multidimensional approach to evaluate pain attributes. These attributes include intensity, duration and location of pain, its somatosensory qualities, and the accompanying emotions of the pain experience. Pain is more difficult to measure or compared to other parameters such as temperature or heart rate. The measurement of pain is difficult because of the variation in individual response to painful stimuli and the subjective nature of pain. Nevertheless, numerous methods have been developed for the measurement of pain out of which the most commonly used are as follows.

Pain as self report on a single dimension:

Category scale-Verbal or visual descriptors are used as a simple method for the subjective reporting of the intensity of pain. Melzack pain scale categorizes pain as mild, discomforting, distressing, horrible and excruciating. Eight point facial expression picture scale, picture scale with differently sized familiar objects coins have worked well for scaling pain intensity. These methods are effective in older people unaccustomed to scaling their experiences, those without language or verbal fluency, the young, and the poorly educated, because scaling of this sort is not limited to words. The disadvantages of this scaling approach include the compulsion to remember or have a printed form for the words or pictures, and the limited possible range of responses to the number of words or pictures in the list.

Rupee analog scale-The rupee analog scale is the Indian modification of visual analog scale wherein pain is quantified

from 0-100 and compared to 0-100 paisa. The advantages are that it is easily understood by both literate and illiterate patients, as also health care professionals, and is easy to chart.

Numerical rating scale-Scale for children uses color to code sensory intensity and faces with varying expressions to code affect. The child gives a non verbal response on each of these dimensions while the in-



strument provides the corresponding Numeric rating scale. This approach demonstrates the possibility of extracting a numeric score from a measurement device having a non numeric interface.

Wong Baker faces pain rating scale-A scale with different faces, a happy face at one end and a face in severe pain and crying at the other with four other faces in between may be used for children.

Visual analog scale-An equally simple and efficient alternative is the visual analog scale, which usually consists of a 10 cm. line anchored at one end by a label such as “no pain” and at the other end by a label such as “the worst pain imaginable” or “pain as bad as can be”. The patient simply marks the line to indicate pain intensity, and a slide rule like device with

the line on the patient’s side and numeric score on the obverse facilitates clinical assessment. VAS is the most common method for measuring pain and pain relief in clinical practice. Unwritten versions of the NRS or VAS work with very sick patients. The provider instructs them to give a number from 0 to 10 or asks them to hold fingers from 0 to 10.



Pain as self report on multiple dimensions-

McGill pain Questionnaire-To assess pain in a multidimensional way, McGill Questionnaire was developed. It helps in rapidly measuring subjective pain experience. It measures the sensory, affective, evaluative and other miscellaneous aspects of pain, thus measuring pain multidimensional. McGill pain Questionnaire can differentiate various pain syndromes like

phantom limb pain, post herpetic neuralgia, metastatic carcinoma, rheumatoid arthritis, osteoarthritis, labor pain and menstrual pain, by assessing different values pain syndrome.

Management⁽¹⁰⁾ - Sushruta has described that vitiated or provoked *vata* is the principle causative factor of all types of *shool*. Acharya Sushruta says that there can’t be

pain without involvement of *vata*. *Pitta* and *Kapha* influences the nature and intensity of pain. So the treatment of *shool* should be started immediately to control and normalize the vitiated *vata*. Even though *vata* being the prime cause of the pain but, the involvement of other *doshas* are also identified by the nature of pain, which speaks about the fine assessment of the pain.

By going through the reference in the Sushruta Samhita it clearly suggests about the concept of pain according to Acharya Sushruta and he managed the pain accordingly as follows-1) as local entity. 2) As systematic agent. 3) As acute condition. 4) As a chronic pathology. 5) Management of psychosomatic component.

1) **lepa-** means an external application of medicines which is one more unique way of delivering the analgesic effect of drugs to the specified area. A lepa seems to have effective role in acute pain or early stages of the conditions inflammatory indurations. This can be correlated to the latest transdermal analgesic patch.

2) **Swedana** -is type of fomentation procedure where some of the painful regions are applied with certain degree of temperature by various means for a specified duration. Here *swedana* is to be incorporated in *daruna*(chronic) and *kathina*(indurate) painful lesions.

3) **Vimplapana** -is the process where gentle pressure is exerted in and around the affected part with pulp of the fingers. By this process localized and immovable vitiated *doshas* are liquefied and made to move away from the site of pain. This procedure can be effectively practiced in area where there is constant *mandarujja*(dull pain).

4) **Visravana** - Here *visravana* is drainage of vitiated blood from a localized congestion which occurs due to acutely inflamed

indurate lesion. Because of the local toxicity hyperemia sets in and results in congestion. Which results in severe pain and such congestion is drained through different methods of *visravana*(bloodletting) procedure. This procedure has an addition effect of prevention suppuration.

5) **Snehapan-** *Snehas*(medicated oil) are used as internal medicines to get rid of the pain. Depending upon the predominance of *doshas sneha* may vary.

6) **Vamanadishodhana karmas** -can also be considered under the means of pain management which act at the root level and brings the homeostasis of the *doshas* this itself reduces the *vedana*.

7) **Parishek** -is method of pouring the medicated liquid from a distance for specific period. As explained above the primary cause of pain is tissue injury which is due to any accident or purposeful surgical procedure to ward off such pain occurring due to exposure to different weapons *parishek* of the region with *ushna tail* would prove to be ideal.

8) **Dhupan**-Surgical site infection is nowadays burning issue which is causing interference in the early uneventful recovery of the patient in the post operative period. This problem was handled very effectively by means *dhupan*(fumigation) procedure. Here *dhupan* was aimed at alleviating the pain which is superficial and it has additional benefits of fumigation like sterilization of wound where the growth of micro organism is prevented.

9) **Agniklarma-** is another method which is used in severe pain in *twak*, *snayu*, *sandhisthithavedana* along with this it also arrests the bleeding which is an additional effect.

10) **Basti** -In *basti* medicines are administered through rectal route. Primarily *basti* is indicated for vitiated *vata dosha* which is said to be the cause of pain. Here *basti*

can be considered as best line of pain management for painful lesions of lower extremities. It can also be used as an effective generalized pain management technique too.

11) **Nasya and dhumapana** -are the different routes of drug administration which are used to relieve the pain in *urdhvajatru-gata Pradesh*(head and neck). In *nasya* drugs are administered through nasal route and it is considered as *shirsodwaram* hence this route may be used to manage pain in the region of *shiras*(head). In *dhumapana* drugs are administered through inhalation method. These two methods can be considered as mode of acute pain management in the head and neck area. *Madyapana* a method where self generated alcohol was used for oral administration.

12) **Management of psychosomatic component**-Confidence boosting in the form of words are pleasant, consoling would alleviate the intensity of pain. Considering *shoka* in itself as *shalya*. *Harshana* listed among *upyantra* also helps in relieving tears there by aid in achieving better pain management.

Herbal drugs- There are some herbal drugs which acts as analgesics mentioned in ayurved texts like Sushrut Samhita, Charak Samhita. In Charak Samhita Sutrasthana 4/17 mentioned ten herbal drugs which acts as analgesic⁽¹¹⁾. In Dravyagun Vidnyana text there is description of *Vedanasthapak Gana*(analgesic herbal medicines)⁽¹²⁾. Description of these medicines and its analgesic property mentioned in our ayurvedic texts as follows.

1) **Sunthi (Zingiber Officinale)**- It has a strong analgesic action which is acts by cyclo-oxygenase -1(COX-1) inhibition. Gingerol and their derivatives especially (8)-paradol are acts as analgesic.

2) **Padmak (Prunus cerasoides)**-In the bark contents securanetin, jenquanin, pru-

netin, padmkashtin, padmetin, sakuranin, taxifolin. Due to these contents it acts as analgesic.

3) **Suchi (Atropia belladonna linn.)**- Atropine and hyoscyamine are the chemical constituents present in the root and leaves and acts as analgesic.

4) **Guggulu (Commiphora mukul)**-It acts as *vatashamak* due to *ushna guna*(hot nature) and so acts as *vedanasthapak*(analgesic).

5) **Parasik yawani (Hyoscyamus niger linn.)**- In leaves and flowers contents hyoscyamine, hyoscine and acts as analgesic.

DISCUSSION

In ayurveda *shool* consider as a symptom and a disease. Post operative pain is considered mostly as a symptom and so treatment is different than *shool* as a disease. Some herbal drugs were mentioned in the ayurved texts as *vedanasthapak*(analgesic). These herbal drugs have no side effect so very useful in post operative pain management.

CONCLUSION

From this conceptual study it is conclude that these herbal drugs described in ayurveda texts acts as good *vedanasthapak* (analgesic). But there is lot of scope to researchers to evaluate their analgesic effect on scientific way. Hence this conceptual study may prove as stepping stone to researchers to do more research on these ayurved modalities for their analgesic effect.

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