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A Critical Analysis Of The Ayurvedic Concept Of Sangyaharana (Anesthesia) And Pain Management

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Abstract- A significant section of the world's population suffers from pain, which remains the primary cause of disability despite much scientific research. The distress that comes with managing this symptom, which can manifest in different degrees, may be lessened by an integrated approach to pain management. The only comprehensive literature that discusses the challenges of real surgery and midwifery is the Sushruta Samhita. Sushruta had a great deal of surgical talent. Sangyaharana was used by Sushruta to perform painless surgery. Sushruta has mentioned a few dravyas, including Madya (wine), while in Bhojaprabandha, Mohachurna has been discussed. Charaka asserts that the patient should receive the Tikshna Sura prior to surgery. Ayurvedic drugs such as Vacha, Ashwagandha, Bramhi, Parijata, and Parasika Yavani have also been used postoperatively to help patients with pain, oedema, and anxiety, according to certain study specialists. However, a strong herbal anaesthetic is still required. An overview of the Sangyaharana (anaesthesia) used by ancient surgeons is given in this review. This page discusses Ayurvedic pain management and Sangyaharana, or anaesthesia. This article's primary goal was to compile information from many texts and publications and present it in an organized manner. All of the medications and Ayurvedic herbal remedies for Sangyaharana and pain relief are discussed in this review article. It also highlights the urgent necessity for scientists and researchers to develop an Ayurvedic anaesthetic medication with Sangyaharan qualities in the modern era. The article ends by discussing how Sangyaharna was administered in the past, as well as historical writings regarding Sangyaharna, medications used to treat pain before Sangyaharna, and their use in the present day.

Keywords- Anaesthesia, pain management, Madya, surgery, Sangyaharana, Shalya

Introduction-

When administered properly, a powerful poison turns into the best medication. Conversely, improper use can make even the best medication more potent. In the Charak Samhita Sangyaharana, Charakacharya defines anaesthesia as a "reversible loss of sensation." Surgeons have recognized the benefits of anaesthesia and endeavoured to provide a painless operating environment since the dawn of time. In India, as in other multicultural nations, traditional medical care was superseded by healing charms and mantras.

A priest known as a Bhisag Atharvan served as the nation's head physician and was seen as more socially significant than a medical specialist. The dark, blind, and primitive inhabitants of Punjab often overran the first known Aryan colonies. The physicians frequently treated the Aryan commanders and soldiers during the conflict. Thus, the Rigveda describes how the Aryan warriors wounded eyes were removed, their legs were amputated and replaced with iron prostheses, and arrow shafts were recovered from their body parts.

The evolution of Ayurvedic surgery has a lengthy and intriguing history. In this essay, we look at surgical techniques, pain management, and the historical context of the anaesthetic Sangyaharana, which was used during operations by ancient Indian doctors. In the fifth chapter of Sutra Sthana, the first collection of Sushruta's writings, Acharya Sushruta describes three processes in surgical therapy.

Sushruta has referred to the idea of Sangyaharna as threefold karma (Three-fold surgical management). Poorva, Pradhan, and Paschat Karma are these three stages. The first, second, and third phases are called Poorva, Pradhan, and Paschat Karma, respectively. Poorva Karma is the name of the preventative strategy. Patients mental and physical preparation for Pradhan karma (anaesthesia or surgery) is referred to as Poorva Karma. This technique includes the following steps: assessing the patient, examining the patient for diseases, documenting the history of common diseases and their treatments, and preparing the operation room and its equipment.

The Langhanadi Virekantam Poorvakarma Vranasya Chapter has 60 wound treatment techniques that Acharya Sushruta mentioned. The initial phase of surgical case management is called Poorva Karma. Because the wound is treated both locally and systemically, the three dosha are maintained in the equilibrium stage, or Samyavastha, during these procedures. These methods ensure the safety and efficacy of surgical procedures. In order to accomplish this, we consider the following elements under "Poorva Karma": the patient, the treatment plan, the instruments, the operating room, the surgeon-procedure. relationship, the anesthetist-anesthetics relationship, and pre-anaesthetic medications. Thus, it is evident that when Sushruta addressed anaesthesia (surgical treatments), he was alluding to Shalya karma.

Madatyaya has four stages (Avasthas) that are very similar to anaesthesia stages, according to Ayurvedacharyas. Sushrutacharya used the Guru Bhojana, followed by the Madyapan pattern, to achieve a state of anaesthesia. Gurubhojana is a pre-anaesthetic measure to ensure rapid action (due to Nidra Adhikya), and Madya is the anesthetic drug. Pre-anaesthetic drugs are now used, and anaesthetic drugs have replaced Madya. Even when using a drug like Afim or Madya, the muscle relaxant action expected from an anaesthetic drug can be observed (one of the signs of these drugs third stage of action).

Pain is described as "An unpleasant sensory and emotional experience arising from actual or potential tissue damage" by the International Association for the Study of Pain. Ayurveda has been the dominant practice in Indian society since ancient times for these concepts.[1] Advances in allopathy have broadened the therapeutic scopes in various diseases in the modern era. Acharya Sushruta first proposed the idea of reducing pain during surgery by drinking alcohol, and modern surgeons later expanded on this idea to formalize it as a distinct field of medicine called anaesthesia [2].

An increasing number of patients are being admitted to hospitals for various surgical procedures. Most of these patients have invariably used Ayurvedic and herbal medicines to treat their current surgical problem or would have taken similar medications to treat other comorbid diseases. When these patients conceal their current treatment regimens, particularly their use of herbal medicines, the clinical scenario becomes more difficult. The general public perceives these medication profiles as these therapeutic agents that are completely safe. The use of complementary and alternative medicine has grown in popularity due to its purported benefits in cardiac, chronic, respiratory, and other disorders.

We can take precautions by withholding herbal medicines for as long as is convenient in the preoperative period. At the moment, medical students do not receive clinical or pharmacological instruction in alternative therapies. This page discusses Ayurvedic pain management and Sangyaharana, or anaesthesia. This article's primary goal was to compile information from many texts and publications and present it in an organized manner.

1.1 In the Indian system of medicine, the anaaesthetic effect of some indigenous drugs.

Finding more helpful and effective anesthetic medications is the primary goal of scientific research in Indian medicine. Bhang (Cannabis sativa), Vacha[3] (Acorus Calamus), Jatamansi[4] (Nardostyachya Jatamansi), Sarpagandha[5] (Rauwolfia serpentina), and Parsik Yavani[6] were all used in the study to determine their anesthetic effects. All of those medications are well known for their sedative and analgesic effects. They are also employed in the treatment of mental illnesses (Manasik Vikar), including Unmada, Apasmar, and Attwabhinivesh.[7]Sushruta suggests that patients be given habit-forming substances like Hitakar Ahar and strong wine.

Table 1: Indigenous drugs in the Indian system of medicine and their properties

S.No.	Drugs	Properties
1	Jatamansi: (Nardostyachaya jatamasi)	It enhances hair growth and blackness and helps with sleep, coughing, and chest pain. It also increases the luster of eves. Additionally, hysteria, convulsions, and epilepsy are all treated with it.
2	Vacha: (Acorus calamus)	The aromatic rootstock is carminative and used as a tonic for dyspepsia and colitis.
3	Bhanga: (Cannabis sativa)	Like opium, the substance first stimulates the nervous system before decreasing crucial functions. In medicine, cannabis is used to reduce pain and promote sleep.
4	Sarpagandha: (Rauwolfia serpentina)	It has clearly defined sedative characteristics. Given twice daily, 20-30 gm of the powdered root has sedative and blood pressure-lowering effects.
5	Parsik yavani: (Hyoscynanus niger)	Hyoscyamine is used for sleeplessness, palpitations, debility, and hysteria and has sedative, antispasmodic, and mydriatic (dilate pupil) properties.

The study found that whereas Sarpagandha and Parsik Yavani had the exact opposite effect, increasing dosages of Bhanga Vacha and Jatamansi increased their induction and dullness tones. It went without saying that each of these drugs would appear to have sedative properties and cause sleep when administered.[8]

1.2. Historical Perspective

To lessen the discomfort of the operation, Madya-wine[9] has been recommended by Acharya Sushruta. It is prominently highlighted at the beginning of Sushruta Samhita's first chapter 3, where it is acknowledged as a major issue facing humanity. The Father of Surgery, Acharya Sushruta, performed a variety of surgical techniques, according to references. Without anaesthetics, surgical operations like laparotomies and calculus extraction were not possible.

As a result, they were renowned for their contributions to the science of anaesthesia, which was the sole reason surgical procedures could be completed quickly. Charaka Samhita[10] suggests Sura, Madira, and Asava to reduce pain during the delivery of the obstructed foetus. It also shows that extremely powerful medications might have existed in the past and aided in the powerful effects of Sangyaharana.

Table 2: List of drugs used for anaesthesia

S.No.	Name of the Drug used	Latin name	Anaesthetic use {Postoperatively for}
1	Ahyphen	Papaver somniferum	reduce pain
2	Bhanga	Cannabis sativa	reduce pain
3	Erandmoola	Ricinus communis	anti-inflammatory action
4	Vacha	Acorus calamus	achieve Tranquillizing effect
5	Parijata	Nyctanthes arbor-tristis	anti-inflammatory action
6	Jatamamsi	Nardostachys jatamansi	achieve Tranquillizing effect
7	Brahmi	Bacopa monnieri	achieve Tranquillizing effect
8	Ashwagandha	Withania somnifera	achieve Tranquillizing effect
9	Rasna	Alpinia galangal	anti-inflammatory action
10	Parasika yavani	Hyoscyamus niger	achieve Tranquillizing effect
11	Shigru	Moringa oleifera	anti-inflammatory action, analgesic properties
12	Shankhapushpi	Convolvulus pluricaulis	achieve Tranquillizing effect
13	Nirgundi	Vitex negundo	anti-inflammatory action
14	Bhringraja	Eclipta prostrata	anti-inflammatory action

It was also observed that Sanjivani was used for anaesthetic recovery. However, it is important to discuss the composition of these medications. Sanjivani is also mentioned in the Balmiki Ramayana, which Vaidya Sukhena offered to Lakshmana in order to awaken him. TwelveIn the Ayurvedic pharmacognosy text Bhava Prakash[11], Ahiphen and Bhanga are mentioned as analgesics.

The main component of narcotic analgesics is opium, also known as Ahiphen. The majority of contemporary hypnotic analgesics are derived from opium. This science of life is based on Tridosha and Nadi Vigyan. [12]Ayurvedic texts go into great detail about the motor (Aagyavahi) and sensory (Sangyavahi) nerves.

Postoperative pain management is a subject that is being thoroughly researched and advanced through innovation. These days, it is acknowledged that Basti[13–15] and Virechana prior to surgery are beneficial. Native herbs including Parsikyavani[20], Brahmi[18], Vaca[19], Jatamansi[16], Ashwagandha[17], and Shankhpushpi[21] are used as premedication to calm and produce trance prior to surgery.

It is now possible to experience the toxicity or adverse effects of contemporary anaesthetics because to this indigenous premedical. The effects are further amplified by lowering the anaesthetic dosages in addition to the toxicity. Following that are Nirgundi[22], Rasna[23], Erandamool[24], Bhringraj[25], and Parijata[26]. As analgesics with anti-inflammatory qualities, Triphalaguggulu [27, 28] and Shigru[29] are used.

1.3. AMERICAN SOCIETY OF ANAESTHESIOLOGIST GUIDELINES AND AYURVEDA

In the US, Ayurveda is considered complementary and alternative medicine (CAM). Since herbs are considered nutritional supplements, they are not subject to the same regulations and standards as the pharmaceutical industry. The July 2001 issue of JAMA goes into great detail about the use of herbal drugs in perioperative settings.[30]

In light of the potential for negative effects from herbal medications, the American Society of Anaesthesiologists (ASA) recommended that patients "stop taking all herbal medications two weeks before surgery." [31] The American Medical Association has also published a notice titled "What You Should Know About Herbal and Dietary Supplement Use and Anaesthesia" for the benefit of patients.[3]

It is difficult to put these recommendations into practice because the majority of preoperative evaluations are conducted only a few days prior to the procedure. This recommendation may be difficult to implement because the majority of preoperative evaluations are conducted within a few days before to surgery.

It has been shown that using some Ayurvedic preparations during the perioperative phase improves patient outcomes. Therefore, the cautious approach taken by the ASA may not always be beneficial to the patient. More scientific research is needed in order to provide recommendations that are more targeted. There aren't many randomized, double-blind controlled trials to back up the assertion and look at the potential dangers of herbal remedies.

The often utilized ayurvedic drugs, such as amla, curcumin, garlic, giloe, ginger, ginseng, guggul, and tulsi, are thoroughly described in a review article along with their characteristics and modes of action, which have positive effects on both modern sciences.[32] Therefore, it is not possible to defend the ASA's careful decision to cease taking herbs two weeks prior to surgery. Consequently, anaesthesiologists refrain from communicating with the patient for two weeks before to surgery. Most of the time, Ayurvedic treatments are thought to be safe. Among the herbs that are cardioprotective are Guggul, Amla, and Giloe.

Numerous traditional herbal remedies, such as Brahmi, Sankhapushpi, Mandukparni, and Jatamansi, that are listed in Ayurvedic literature have previously been used in human patients as pre-anesthetic treatments. It has been demonstrated that the same Vacha (Acorus calamus), which is utilized in clinical trials as an Ayurvedic premedicant, is also useful in the treatment of mental and anxiety adisorders. This is due to the fact that Vacha effectively generates drowsiness, controls elevated body temperature, and may be beneficial for people who already have hyperthermia. It doesn't result in C.V.S. or respiratory depression.

[33]Preoperative anxiety is a challenging concept in patient preoperative care. After elective surgery, anxiety is a typical side effect that is usually accepted as normal. Thus, the anaesthesiologist is in charge of managing preoperative anxiety. Preoperative anxiety has been treated with a variety of drugs, but none of them are without side effects. The current need for premedication may only be met by a few number of drugs that are mentioned in Ayurvedic literature.

The drug Tagara (Valeriana jatamansi Jones) root is used as a premedication for dissociative anesthesia. It has been classified as a central nervous system stimulant (Vedanasathapana), an analgesic, a sedative, an anticonvulsant, and an anti-anxiety drug for stress and tension.[34] Tagara is comparable to contemporary medications as a premedication for preoperative anxiety. Given that Tagara dramatically reduces heart and breathing rates without altering blood pressure, the evidence points to its numerous anxiolytic properties. There were no negative effects discovered. Thus, the trial medication, Tagara, is a safe and proven premedication that can be used as a premedication agent before to surgery, especially in cases where patients are nervous and apprehensive.[35]

1.4 THE CONCEPT OF PAIN IN AYURVEDA

In Ayurvedic literature, pain is commonly referred to by a variety of names, such as Ruk, Ruja, Vedana, and School; however, School is arguably the most fitting term of them, since it describes the feeling of driving a nail into one's body.[36] Pain is explained by terms like "School," "Ruja," "Vedana," and "Ruk" in the Sushrut Samhita, a major work of Ayurveda. Similarly, Charak Samhita Anmardprashaman lists 10 drugs for body discomfort, including Shoolprashaman and Vednasthapak Mahakashaya.[37,38]

It has also been explained that vitiated "Vata" is the main cause of all unpleasant ailments among the Tridoshas.[39]Examples of this vitiation of Vata are Margavarodh janya Vata prakop and Dhatukshya janya Vata prakop. [40]Likewise, the significant contributors in Ayurvedic literature, pain is commonly referred to by a variety of names, such as Ruk, Ruja, Vedana, and School; however, Vata's "Ruksha" and "Chala" Gunas (characters) may be the most fitting term for expressing pain. In particular, the Ayurvedic classification of pain investigates the various types of schools that represent colic.

According to the location of their visceral organs, school children are divided into 13 categories by the Sushrut Samhita.16 distinct school kinds are listed in Madhavnidan (8 Doshas-recommended school types + 8 Doshas-recommended Parinaam school types), 8 Yogratnakar types, and 4 Kashyap Samhita types, according to Doshas.[41–44]

Ayurveda lists several methods for managing pain, including Jalaukaavcharan (leech therapy), Lepa (medicated paste), Snehan (oleation), Vedhankarma (needle puncturing), Agnikarma (heat burn therapy), Bastikarma (enema), and Swedish (fomentation). This essay investigated numerous ways for treating pain in depth, including their mechanism of action, how they influence the body, and their relevance today.

[45]Ayurvedic treatments such as Angamarda, Shool Prashaman, and Vednasthapak Mahakashaya are mentioned in the Charak Samhita. The Angamarda Mahakashaya is accepted by Dhatukshaya and Margavrodhjanya Vataprakop as a remedy for Angamarda, or body soreness.

Shoolprashamiya Mahakashay possesses Ushan qualities, which make it great for stomach colic, whereas Vednasthapak Mahakashaya has Kashaya Rasa and Sheeta Virya can be used well in pain management due to traumatic experiences. Ajmodadichurna, Shankhvati, Rasonadivati, Agnitundivati, Hingvadi churna, and other remedies are also used to treat Udarshool. Other painful disorders with varying prognoses can be effectively treated with Guggul Rasna, Dashmool Haridra, Shallaki, Shuntthi, Rakta, Chandan, Ashwagandha, and Aam Vateshwar-Vatachintramani Rasa.

To treat pain after surgery, a variety of analgesics are offered. Four Madatyaya stages, or Avasthas, have been mentioned by Ayurvedic acharyas as being comparable to the stages of anaesthesia. To induce anesthesia, Sushrutacharya employed the Madyapan pattern after completing the Guru Bhojana.

Madya is the anaesthetic medication, and Gurubhojana might be thought of as a pre-anesthetic measure to guarantee prompt effect (because of Nidra Adhikya). Madya has been superseded by anaesthetic medicines, which are currently utilized as pre-anaesthetic medication. Even when taking medications like Afim or Madya, which are indicators of their third stage of action, the muscle relaxant effect anticipated from an anaesthetic agent is evident.

DISCUSSION

Any surgery involves pain, and the patient won't put up with the suffering until the surgeon can perform his operations without causing them any anguish. Acharya Sushruta has suggested Madya-wine[46] to reduce any discomfort during the procedure. The study investigated the anaesthetic properties of Parsik yavani (Hyoscyanus niger), Sarpagandha (Rauwolfia serpentina), Jatamansi (Nardostyachya Jatamansi), Vacha (Acorus Calamus), and Bhang (Cannabis sativa). These drugs are all well known for their sedative and analgesic properties. Additionally, they cure psychiatric diseases like Unmada, Attwabhinivesh, and Apasmar[47] (Manasik vikar).

Sushruta advises giving the patient strong wine and habitual Hitakar Ahar.[48]The patient won't experience any discomfort throughout the procedure because of the wine. The patient advanced to the Murcha stage[49] because Sushruta defined the Gunas of Madya and Vusha as Laghu and Ruksha, which are the opposite of Oja Guna. Charaka Samhita[5] suggests Sura, Madira, and Asava.

References to Sangnaapanayana Dravyas (induce anaesthesia with Madya afore surgery) may be found in Charaka and Madyenamohayitwa. Vedna is mostly caused by Vatadosha, which Tagara helps to lessen. In the Sushrut Samhita, a traditional Ayurvedic literature, some phrases like Ruja, Shool, Ruk, and Vedana disclose the state of pain. Similarly, Charak Samhita Angmardprashaman mentions Shoolprashaman and Vednasthapak Mahakashaya.[50]

The many Ayurvedic pain management techniques are explained in detail in this page. Furthermore, Tagara possesses Snigdha Guna, which has the ability to govern Vatadosha.[51]Tagara regulates Vatadosha, one of the primary elements in the pathophysiology of Chittodvega. Tagara is the owner of Snigdha Gun, Kashaya, Tikta, and Katu Rasas.[52]

Even while certain Ayurvedic researchers have demonstrated that spinal anaesthesia with Sarapunkha and local anaesthetic with Tagara may be created, these treatments still require development or commercialization. The main objective of palliative treatment is to rectify the vitiated Vata Dosha (Shaman Chikitsa). To further relieve this Vata imbalance and pain, Madhura, Amla, and Lavan Rasa (taste) herbs are recommended. [53]Gaining knowledge about the cell receptors that mediate taste and pain will improve comprehension of this concept.

G-protein Coupled Receptors serve as sensors for emotional discomfort. [54]In summary, the use of Madhura, Amla, and Lavan Rasa to relieve pain can be explained by the GPCR's function in taste and pain reduction. [55]A significant step forward for Ayurvedic surgery would be made if someone took up this subject and learned about Ayurvedic principles as well as local and general anaesthesia.

CONCLUSION

Acharya Sushruta was the first surgeon in history to undertake complex surgery in cases such as Baddhgudodara (intestinal blockage), Chhidrodara (intestinal perforation), Ashmari (urolithiasis), Sadyo Vrana (traumatic wound), etc.

With slight modifications, these operations are still carried out today. Every procedure performed in the past must have made use of the idea of anaesthesia, which has made surgery easier and less unpleasant. Finding a trustworthy anaesthetic to use during surgery remains a challenge for Ayurvedic surgeons. Only postoperative pain relief, postoperative tranquility, and postoperative management have been addressed by the Ayurvedic drugs covered here.

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