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Origin and Evolution of Sangyaharan (Anaesthesia) in Ancient India

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ABSTRACT

The concept and practice of *Sangyaharan* (Anesthesia), widely believed to be a Western innovation of the 19th century, finds its earliest roots and most sophisticated origins in ancient India; Long before the advent of modern anesthetic techniques, Acharya Sushruta (circa 600 BCE), known as the Father of Surgery and Plastic Surgery, described and implemented to keep the patient under sedation for painless surgical procedures and pain management as recorded by Acharya Sushruta in his *Sushruta Samhita*. This foundational Ayurvedic text outlines the use of *Madyapanam* (intoxicating drinks such as wine) combined with herbal medicines (sedatives) including *Cannabis sativa* (Bhang), *Acorus calamus* (Vacha), *Nardostachysjatamansi* (Jatamansi), *Hyoscyamus niger* (ParasikaYavani), and others to induce insensibility and pain relief. Sushruta's pioneering approach to pain management not only enabled over 300 types of surgical operations—including rhinoplasty, cataract extraction, and intestinal repairs—but also introduced the first systematic preoperative, operative, and postoperative protocols emphasizing patient comfort, safety, and consent.

This review traces the evolution of anesthesia from its early evidences in ancient civilizations—Mesopotamian, Egyptian, Chinese, Greek, and Indian—to its modern refinement through the use of ether, chloroform, and nitrous oxide in the 19th century. The manuscript underscores that Acharya Sushruta's *Sangyaharan* laid the conceptual and practical foundation for modern anesthesiology. Through meticulous documentation and use of natural sedatives, analgesics, and nerve-desensitizing agents, ancient Indian medicine achieved highly advanced pain management practices that predate Western scientific anesthesia. Thus, the study establishes India's crucial and pioneering role in the origin and evolution of anesthesia as a medical discipline.

Keywords: Sangyaharan, Sushruta Samhita, Ancient Indian medicine, anesthesia, Ayurveda, pain management, surgical history, herbal sedatives.

Aim And Objective:

The aim and objective of this article is to explore with available documents of origin and evolution of Sangyaharan (anaesthesia) in Ancient India

INTRODUCTION

As everybody knows and thinks that Anesthesia which plays an important role in surgical operations was developed in the modern world by the West which is not acceptable. If one can go through the history of

Ancient India where in Acharya Sushruta a dyon in surgical procedures who was active around 600 BCE in Varanasi and regarded as Father of Surgery and also father of Plastic Surgery in those days when vest has not opened their eyes in healthcare procedures invented Sangyaharan (Anesthesia) that has become main component in Surgery for pain management and also keep the patient in an painless condition throughout the surgery. Acharya Sushruta in the valuable written by him called Sushruta Samhita, a foundational text for Ayurveda documented extensively, the surgical procedures including the use of Sangyaharan Technique which is nothing but the present form of Anesthesia Technique. In this article an attempt is made to bring out the true

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facts of surgical procedures by keeping the patient under Sangyaharan (Anesthesia) so that the patient will not have any semblance of pain during the entire procedure. Acharya Sushruta recommended in the beginning administering strong wine (Madyapanam) to the patients before surgical procedures to reduce pain and anxiety. In addition to alcohol, Acharya also documented the use of other substances such as Cannabis (a tall plant with a stiff upright stem, divided serrated leaves, and glandular hairs. It is used to produce hemp fibre and as a drug) to induce Anesthesia so that the patient undergoing surgery will not feel any pain or anxiety. Because of this invention of Sangyaharan, Acharya Sushruta has invented the procedures in around 300 Surgical procedures including but not limited to Cataract Surgery and Rhinoplasty. This noble personality of India whose contribution towards health and healthcare are matchless in this World also designed 120 Surgical instruments and emphasized the importance of anatomy and dissection.This is the first known application of Surgical instruments during the procedures while keeping the patient under Anesthesia that have influenced faraway places in Greece, Persia and Europe. The present system of Modern Medicine/Modern Surgeries cannot be done without Anesthesia. The first known early form of Anesthesiain the modern world was used at Massachusetts, General Hospital in Boston by a dentist William TG Mortan and Surgeon John Warren on Oct 16th 1846. In this article an attempt is made to bring out the unknown facts but are true in nature about Sangyaharan (Anesthesia) which is nothing but pain management in Ayurveda, successfully by Acharya Sushruta in Ancient India which is a proud movement for every Indian to acknowledge the great work done by the Acharya and contribution to the healthcare procedures that has become a foundation stone for the present system of Anesthesia. In addition a review is also made the ingredients that are being used in addition to Alcohol during the surgical procedures that are identified, developed and used by the Acharya to keep the patient under painless management till the procedure is completed.

LITERATURE REVIEW

Before we go deep into the evolution of Anesthesia in Ancient India, let us have a look at the history of general Anesthesia that is available on record. In ancient Greek texts, such as the Hippocratic Corpus and the dialogue Timaeus, the term ἀναισθησία (anesthesia) is used, which translates to "***without sensation***". This term is derived from the prefix ἀν- (an-), meaning "without", and αἴσθησις (aisthēsis), which means "sensation". The concept of anaisthēsia is significant in understanding the historical foundations of anesthesia and its relevance in medical practices. In 1679, Steven Blankaart published *Lexicon medicum graeco-latinum* with the Latin term *anaisthesia*. In 1684, an English translation appeared titled *A Physical Dictionary*, with *anesthesia* defined as a "***defect of sensation, as in paralytic and blasted persons***". Subsequently, the term and variant spellings like *anæsthesia* are used in medical literature signifying "***insensibility***". The first attempt in administering general anaesthesia were probably "***herbal remedies and nonsedatives***" and was used in Ancient Mesopotamia thousands of years ago.

In addition to India, globally there were attempts to producing a general anesthesia through the writings of Ancient Sumerians, Babylonians, Assyrians, Acadians, Egyptians, Persians, Indians and Chinese. Though there are significant advances in anatomy and surgical procedures/techniques during renaissance, surgery has become a last resort/procedure/treatment as it is associated with pain. In those days very limited surgical procedures are carried out in addressing times of life-threatening conditions and the main aim is to focus the technique on speed at which the procedure is completed to limit blood loss. All these surgical procedures how fast they were carried out and techniques that are available and used there is high risk of complications if not the death. Around 80% of these surgeries led to severe infections and 50% of the patients died either during surgery/procedure or from complications thereafter. However, many of the patients who are fortunate survive remain psychologically traumatized for their rest of their lives. However, with the advent and discovery of Anesthesia as was developed in Ancient India which was recorded in Sushruta Samhita paved the way for the development of modern Anesthetic techniques. Only in 19th century scientific advancements in pharmacology and physiology many attempts were successfully made in bringing out suitable material for Anesthesia that has taken shape to minimize the loss of death and other complications after the procedure due to administering of Anesthesia that was developed thereon. Several attempts were made with different substances like nitrousoxide;chloroform are few substances that revolutionized and brought the present form modern anesthesia technique. Off late in the 20th century, the safety and efficacy of general anesthetics of further improved with the routine use of tracheal incubation and advanced airway management techniques, monitoring

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and new anesthetic agents with improved characteristics, standardized training programs for Anesthesiologists and other paramedical staff who are deployed in this program.

As regarding the etymology of Anesthesia, it was observed in Ancient Greek texts such as Hippocratic corpus and the dialogue Timaeus, the term ἀναισθησία (anaisthēsíā) is used which translates to without sensation. The first attempt in general anesthesiawere probably from herbal remedies known as sedatives and was used in Ancient Mesopotamia thousands of years ago. The other important subject matter used by Sumerians.

As the subject matter is limited to the extent of history in evolution of Anesthesia in Ancient India, the author wishes to confine himself with the development of Anesthesia from the time of Acharya Sushruta. Acharya Sushruta, a dyon of surgery in Ancient India who was born in 17th century B.C is renowned Surgeon and nicknamed in those days “Father of Plastic Surgery” and brought out his experiences and results in Surgical Procedures through the most valuable book Sushruta Samhita, a comprehensive textbook on medicine and surgery. Acharya Sushruta was credited with the advancement of medicine in Ancient India, and he is instrumental to take the Surgery in Ancient India to admirable heights and that was regarded as the Golden Age of Surgery in Ancient India.

Acharya Sushruta made numerous techniques in Pain Management Skill for completing complicated Surgeries that are not even attempted by vests. In those days, in addition to Acharya Sushruta, Acharya Charaka who wrote Charaka Samhita and Vagabhatta and these people are the founder fathers of Ayurvedic Medicine in Ancient India and it is believed that many people from other parts of the Globe are visiting Ancient India in those days for treatment and surgical procedures that are not available in their countries makes a point to believe that medical tourism also flourished in those days and it is not a new phenomena that presently people are crawling.

Acharya Sushruta contributed a lot in Surgical procedures such as a). Acharya Sushruta induced Anesthesia using intoxicants like Wine and henbane for successful surgeries/procedures, b). Acharya specialized in Rhinoplasty (Plastic Surgery) and Ophthalmology (Cataract ejection), c). Acharya Sushruta described surgery under eight heads such as,

- Chedya (excision)
- Lekhya (scarification)
- Vedhya (puncturing)
- Esya (exploration)
- Ahrya (extraction)
- Vsraya (evacuation)
- Sivya (suturing)

The roots and ancient origins of the Anesthesia that is available from records as early as 4000 BCE in Sumerian, after that for thousands of years an effective pain relief and pain management relied mainly on herbal medicines, alcohol and primitive techniques before modern anesthesia was introduced in 19th century, a chronological order of development of Anesthesia as recorded was mentioned below.

Ancient and Early Methods (4000 BC – 1000 AD)

- **Mesopotamia (c. 4000 BC):** Sumerians in Mesopotamia are considered the earliest to use alcohol (ethanol) as a sedative.
- **Opium and Herbs:** The Sumerians also cultivated opium poppy, with records of the "plant of joy" dating to 3400 BC. Egyptian papyri record the use of cannabis, mandrake fruit, and opium.

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- **China (c. 300 BC – 200 AD):** Legendary physician Bian Que (c. 300 BC) and later Hua Tuo (c. 140–208 AD) are known for using a mixture called *mafeisan*, a wine-based, cannabis-containing, and herbal potion to induce unconsciousness for surgery.
- **India (c. 400 BC):** The *Sushruta Samhita* (Ayurvedic medicine) mentions using cannabis and wine for anesthesia.
- **Roman and Greek (1st Century AD):** Dioscorides, a Greek physician, described using mandragora (mandrake) boiled in wine to cause insensibility.

Middle Ages and Renaissance (1000 AD – 1700s)

- **Soporific Sponge (10th–13th Centuries):** Arab physicians developed, and European surgeons (like Theodoric of Lucca) adopted, the "soporific sponge"—a sponge soaked in opium, mandrake, hemlock, and hyoscyamus, then dried and re-moistened for inhalation.
- **Dwale (1200–1500s):** In England, a mixture called "dwale" was used, containing hemlock, opium, and henbane.
- **Ether (16th Century):** Although sometimes credited with an 8th-century origin, diethyl ether was synthesized by Valerius Cordus in 1540 and its analgesic properties were noted by Paracelsus around 1525.

The Path to Modern Anesthesia (1800s)

- **Nitrous Oxide (1799):** Sir Humphry Davy discovered the analgesic properties of nitrous oxide ("laughing gas") but did not apply it to surgery.
- **First Modern General Anesthesia (1804):** Japanese surgeon Hanaoka Seishū is credited with the first documented, successful use of a general anesthetic (*tsūsensan*) for a major operation (partial mastectomy).
- **Ether (1842):** Dr. Crawford Long in Georgia first used ether as a general anesthetic, though he did not publish immediately.
- **Public Demonstration (1846):** On October 16, 1846, dentist William T.G. Morton performed the first public demonstration of diethyl ether at Massachusetts General Hospital, marking the start of widespread, effective, modern anesthesia.
- **Chloroform (1847):** James Young Simpson in Scotland introduced chloroform, which became popular after John Snow administered it to Queen Victoria.

Evolution of Techniques

- **Local Anesthesia (1884):** Karl Koller, at the suggestion of Sigmund Freud, used cocaine as a local anesthetic for eye surgery.
- **Muscle Relaxants (1940s):** The use of curare (a paralyzing arrow poison) in 1942 enabled complete muscle relaxation for surgery.
- **Intravenous Anesthesia (1934):** Sodium thiopental was introduced as the first intravenous anesthetic.

The main aim of using Anesthesia right from the beginning is Painless Surgery/Pain Management. Though Surgery was available from the dawn of human civilization as a mode of treatment for a spectrum of human diseases. It is not one-daywisdom but many challenges are to be faced by the Acharyas, right from Sushruta time till date that has become a viable and safe treatment/procedure for chronic and other ailments that are not being cured by any other mode. A report written by Chandramohan, Vice Chancellor, Yenepoya University, Mangalore, Karnataka, India, India is often considered the cradle of Surgery, and Acharya Sushruta, the father of Surgery, "***Sushruta describes eight types of Surgical procedures including Chetana or excision. Vyadhana or drainage, Esane or Probin etc. under these eight categories he had included Rhinoplasty, Surgical treatment of Fistula in Ano, Surgery for hemmorhoids, Visuco, Lithotomy, closure of perforated intestines, correction of intestinal obstructions etc. under the specific type of Anesthesia using concoction of Cannabis,***

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etc., in wine or Alcohol orally." Opeum was brought to India by Arab traders in 18th Century, the other procedures that are being used in ancient India are,

Ksharasutra, is an alkaline thread, deviced by Sushruta. The thread is treated with herbal medicines and used for removal of Piles, Fissures, Fistula and Sinus around the Anal sphincter.

Samohini and Sanjeevani: In the beginning of the Christian era, there is evidence of Raja Bhoj (527 A.D) an Indian Surgeon operating on his patients using concoction of herbs called Samohini for induction of anesthesia and Sanjeevani for recovering from anesthesia.

In addition to India, the Sumerians, Egyptians, Chinese, Greek, Islamic, Japanese and Europeans also contributed their might in developing anesthesia.

It is widely known as 30th March was the doctors day in many countries to commemorate, a historic event when for the first time in the history of Surgery, a tumor from the back of the neck was removed under general anesthesia in 1842. In 1847, chloroform mania, as an inhalation Anesthesia was introduced by Scottish Obstetrician Young Simpson and was subsequently replaced the ether, thereupon there are numerous elements that are being used as Anaesthestic material till date.

DISCUSSION AND ANALYSIS:

In modern times globally, the growth and scope of anesthesia have taken a prominent place due to advancement in procedures especially critical in nature. In this regard, Pain management and keeping the patient in unconscious state to keep him/her from the ordeal of procedures. However, this is not a new subject in India, but it dates back to ancient India wherein Acharya Sushruta conceptually developed the procedures even in critical in nature by using herbal sedations to the patients on whom the procedures are contemplated. In this subject, we are mainly dealing with the subject of Sangyaharan(Anesthesia) that was pioneered by Acharya Sushruta who was supposed to live in 600 BCE. Sangyaharan is the root cause of the present development in Anesthesia. Acharya Sushruta a distinguished surgeon in Ancient India who lived in Kasi to present Banaras carved a niche in the history of medicine. Acharya's teachings in the field of innovations in Surgery/Procedures were groundbreaking to the far-reaching effects on the development and advancement of Surgical Procedures/Techniques universally long before the others in the field of medicine have never thought of Acharya Sushruta's pioneering work in surgical procedures especially in the area of reconstructive procedures set for the future advancements in that field. He pioneered in Plastic Surgery when others have not dreamt of in those days Acharya has developed such heart-breaking technique nose reconstructions using cheek flaps and other innovative techniques developed by Acharya himself laid the foundation for modern Plastic Surgery. Along with these techniques Acharya also meticulously designedthe surgical instruments that he used in those procedures with little or no modifications that are being used globally in surgical procedures. This clearly shows not only his advancement and knowledge in medicine and surgical procedures but also Acharya's Acumen in metallurgy. One can find all these things in the monumental work of Acharya Sushruta written under the name Sushruta Samhita and that stands as a oldest known surgical text, providing a comprehensive exploration of medical practices during Acharya's time. This Sushruta Samhita is divided into six chapters and covers essential principles, pathology, human anatomy, in medical and surgical management and toxicology. This Sushruta Samhita provides detailed descriptions of Surgical Procedures/Techniques including incisions, extractions, cauterization, and various complex procedures such as prostate gland removal, hernia surgery and cesarean sections and this text of texted by Sushruta also offers a wealth of knowledge on dislocations, fractures and the classifications of bones as well as principles of fracture management, traction, manipulation and stabilization. This text also provides insights to the study of human body and its sequential development, embryology and even fitting of prosthetics. Acharya's Sushruta Samhita also contains extensive compendium of 1120 illnesses; 700 medicinal plants and preparations derived from minerals and animal resources. In addition to all these things, Acharya also pioneered by understanding and exploring the various methods of Sangyaharan (Anesthesia) in making surgical procedures painless and discomfort to the patients. In the early stages Acharya used wine and cannabis insense as an Anesthetic which is considered primitive by modern standards but said the bar for combining pain management during difficult surgical procedures. Acharya Sushruta also developed many such combinations that can be used in Pain Management and keeping the patient in unconscious state so that the patient need not feel the pain of the procedure. These preparations

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by Acharya were administered orally or topically to help alleviate pain and provide a degree of sedation during surgical procedures. Acharya also highlighted the value of giving the patient a drink of strong wine before the procedures

The importance of Sangyaharan (Anesthetic effect) is the primary goal in surgical procedures in controlling pain management and discomfort and agony to the patient during procedures Anesthetic medication is the primary goal of scientific research in Ancient India. In this regard, to explore the possibilities of Anesthetic effect of certain ingredients such as Bhang, Vacha, Jatamansi, Sarpagandha and ParsikYavani are being studied and used by Acharya to determine their Anesthetic effect. The above-mentioned medicines are known for their sedative and analgesic effect, these ingredients mentioned above are also employed in the treatment of mental illness (Manasik Vikar), including Unmada, Apasmara and Attwabhinivesh. The importance of surgical procedure is removing the sick component from the patient to make him feel happy. In this regard, to minimize the suffering of the patient sedatives are necessary to use for the very same reason Acharya developed this form of medication that is being applied during surgical procedures. The Anesthetic effect of certain indigenous drugs in the Indian system of medicine are also explained here. In such studies it is found that increasing doses of Bhanga, Vacha and Jatamansi increased their induction and dullness tones. The main object of Anesthetic effect;

Table 2: List of drugs used for anesthesia

S. No.	Name of the Drug used	Latin Name	Anesthetic use
1	Ahypehn	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	Nardostachysjatamansi	achieve Tranquillizing effect
7	Brahmi	Bacopa monnieri	achieve Tranquillizing effect
8	Ashwagandha	Withaniasomnifera	achieve Tranquillizing effect
9	Rasna	Alpinia galangal	anti-inflammatory action
10	Parasikayavani	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.	Ecliptaprostrata	anti-inflammatory action

If we go through the Vedic literature of ancient India several references regarding practice of surgery/surgical procedures are found in addition to this Sangyaharan. In the present situation, in healthcare procedures, the growth and scope of Anesthesia have enormously expended with the introduction of new drugs, techniques, procedures, apparatus etc; such as full anesthesia, partial anesthesia, pinpointed anesthesia etc. The scope of anesthesiologist has broadened significantly and relates to various problems in medical wards, intensive care units and in pain clinics. Now Anesthesia is one of the foremost subjects in medicine and medical procedures and without it nothing is possible. When we go through the ancient Indian literature on the health and healthcare procedures one can find numerous references regarding the practice of surgery and use of drugs in Sangyaharan. Off late when Sushruta era entered the medicine Acharya mentioned several types of surgical procedures in his

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treatise in which this area of Sangyaharan (Anesthesia) has been given prominent place because Acharya found it necessary and the importance of pain management during and after procedures. When we go through the Sushruta Samhita a treatise on medical health one can find that Susrutha is not only an eminent surgeon in those days but also the Acharya pioneered in the field of Sangyaharan (Anesthesia). In his treatise, the Acharya mentioned preoperative preparations and post-operative management and its importance in surgical procedures, the drugs that are being used (herbal medicines), in Ancient India are not only to minimize the pain during surgical procedures but also in post operative period, in traumatic another painful conditions.

Acharya Sushruta who pioneered surgical procedures and Sangyaharan classified these surgical procedures under three categories where 1. Purva Karma - Pre Operative, 2. Pradhana Karma – Operative, 3. Paschath Karma – Post Operative. Acharya also described the various aspects and the methods that are being put into operation in these three stages, the most important thing is management of pain which was given a prominent place by Acharya because the aim of this is to minimize the suffering and painless procedure so that during the procedure there cannot be any disturbance by the patient or agony to the patient that disturbs the procedure of the Acharya. There are lots of evidence of Sangyaharan (Anesthesia) used by Acharya and also he himself pioneered the development of that branch of Anesthesia which led to the advancement of Surgical procedures has become the basis in the modern era to use different types of Anesthetic drugs for different procedures. It is wondered the present form of consent (legal binding nature) obtained from the patient or the accomplice or the guardian presently is being adopted by the Acharya in those days, a reading of the Ancient India Surgical Procedures especially Sushruta Samhita, the mentioning of this consent and its importance in the context of Ashmari Chikitsa in conditions where death is certain if surgery is not done, when there is doubt between the life and death while performing the procedure, then the surgeon or the Acharya in those days should take consent from the concerned people.

It is relevant to mention in this context regarding, Pradhana Karma (Operative), Chedana (Excision), Bedhana (Incision), Lekhana (Scrapping), Vyadhana (Puncturing), Esana (Probe), Aharana (Extraction), Visravana (Drainage), Seevana (Suturing), Sutra (Thread), Soodhi (needles)

1. Paschat Karma (Post Opearative)
2. Nasa Sadhana (Rhinoplasty)
3. Karma Sandhana (Lobuloplasty)
4. Oshta Sadhana (repair of Harelip)
5. Abdominal Surgeries
6. Gynecological and Obsterical Surgery
7. Orthopedical Surgeries
8. Reno rectal surgeries
9. Para Surgical Procedures
10. Agni Karma
11. Kshara Karma
12. RakthaMokshana
13. Blood Letting
14. Concept of Vrana (ulcers)
15. Concept of Marmas (vital points)

The surgical procedures explained and described in Sushruta Samhita by the Acharya are the basis for modern surgery. In fact, the basics of Plastic Surgery called Rhino Plastic Surgery in those days/Nasa Sandhana/Reconstruction of Ear Lobe. It is not known to many that Acharya Sushruta is the first person in the

Globe to invent the method of Skin Grafting and the same is followed even today. Another important aspect of Acharya is the innovation and development of Ashta Vidha Shastra Karma are being implemented in various forms in modern surgical procedures. The concept of physical rehabilitation after full recovery of procedure from any fracture or dislocation that is being followed by the Orthopedic Surgeons is nothing, but the same principles used by Acharya but the present form is known as Physiotherapy. The important point during procedure, i.e. unbearable pain is being attended to by the Acharya in the form of various herbal medicines

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developed by Acharya to keep the patient under sedation, so that the patient under sedation will not feel the pinch of pain and is nothing but the present anesthesia.

The remarkable achievement by Acharya Sushruta in Ancient India not only the invention of surgical procedures and surgical instruments he always preferred to give Madhya (wine) to the patients before the surgical procedure to minimize the pain during the procedure. It is a basic principle presently followed by Anesthesiologists in modern surgery to minimize the pain during procedure and to provide safe and painless procedure and making the patient conscious when and where it is required. When we go through the ancient scriptures about healthcare in Ancient India especially through the Acharya's treatise one can find that Acharya Sushruta was not only an eminent surgeon but was also the pioneered in the field of Sangyaharan, the present form of Anesthesia. For this in his treatise Acharya also mentioned preoperative preparations and the importance of individual surgical procedure and different substances to bring the patient under sedation. A thorough investigation on the literature that is available in Ancient India one can find the most advanced application of Sangyaharan (Anesthesia), till Acharya Sushruta developed and implemented it is unknown to the world so that we cannot call the Acharya Sushruta, as Father of Surgery and also an eminent scholar in Anatomy and has got full grip and knowledge on painless management during procedure with the help of herbal medicines and wine to keep the patient under sedation.

The first and foremost thing during the surgical procedure is not only pain management but also to keep the patient under sedation so as to continue the procedure without any disturbance. For this purpose, Acharya Sushruta identified number of herbal plants having medicinal value and at the same time can have anesthetic effect. Some of the herbal medicines that are identified by Acharya are Bhang, Vacha, Jatamans, Sarpagandha and parsikYavani are extensively used in the study to determine their anesthetic effects. The above said herbal plants have immense potential for their sedative and analgesic effects. These herbal medicines identified Acharya are not only used for sedatives but also mental illness like Unmada, Apasmar and such other uncontrollable diseases. When the sickness of a patient cannot be rectified other than surgical procedures to remove the sick component. These types of sedative materials are necessary. This clearly shows the Acharya's knowledge not only the effect of sedation by using this herbal medicines and quantity, quality and percentage of sedation that requires for procedure to procedure are all written in the Sushruta Samhita. Following are the list of some drugs used for anesthesia

Table 2: List of drugs used for anesthesia

S. No.	Name of the Drug used	Latin Name	Anesthetic use
1	Ahypehn	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	Nardostachysjatamansi	achieve Tranquillizing effect
7	Brahmi	Bacopa monnieri	achieve Tranquillizing effect
8	Ashwagandha	Withaniasomnifera	achieve Tranquillizing effect
9	Rasna	Alpinia galangal	anti-inflammatory action
10	Parasikayavani	Hyoscyamus niger	achieve Tranquillizing effect

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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.	Ecliptaprostrata	anti-inflammatory action

In ancient India people used to use herbal remedies like Opeum, Mandrake, Cannibis, and Hanbane. In addition to alcohol and techniques like nerve comprehension to reduce pain and induce unconsciousness, the procedures with sleeping sponges soaked in drug mixtures are the common methods in those days before the present form of Anesthesia is invented. To bring the patient under sedation Patients were asked to drink wine infused with these above-mentioned herbs as suggested by the Acharyas. The other method practiced for sedation in Ancient India is inhalation (SpongiaSomnifara, meaning soaked sponges in mixture of Opeum, Mandrake and other herbs allowing them to try and then rehydrated them and held them under the patients nose. As mentioned, "***the aim of nerve compression is methods to compress peripheral nerves were depicted in Ancient Egypt to numb limbs***". These methods provide varying degrees of pain relief with risks due to the potency and inconsistency of natural ingredients paving the path for modern anesthesia.

Following are the Ayurvedic drugs used in sedation: Table 1: Ayurvedic Drugs

1	Ahiphen	Post operatively to reduce pain
2	Bhanga	Post operatively to reduce pain
3	Jatamamsi	Post operatively to achieve Tranquility
4	Ashwagandha	Post operatively to achieve Tranquility
5	Parasikayavani	Post operatively to achieve Tranquility
6	Shankhapushpi	Post operatively to achieve Tranquility
7	Brahmi	Post operatively to achieve Tranquility
8	Vacha	Post operatively to achieve Tranquility
9	Nirgundi	Post-operative, anti-inflammatory action.
10	Rasna	Post-operative anti-inflammatory action
11	Erandmoola	Post-operative anti-inflammatory action
12	Bhringraja	Post-operative anti-inflammatory action
13	Parijata	Post-operative anti-inflammatory action
14	Shigru	Post-operative anti-inflammatory action

CONCLUSION

Before we had modern anesthesia Surgical procedures were painful and the patient is subjected to stress and strain due to the pain and the surgeons in those days must meticulously plan out for the procedure else the results will be negative. Anesthesia is the method of using substances that are usually called anesthetics to reduce or minimize pain during surgical procedures and such other procedures where the surgeon has to open the body. The present form of anesthesia that is being in use today has gaseous substances and instruments to

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exactly measure the quality and quantity of substance that is being administered for a particular procedure. However, in ancient India in those days the Acharya's (Surgeons) especially sushruta used to administer herbal medicines having sedative nature with alcohol/madya as the base to create different levels of insensibility (sedation) namely parital sedation, full sedation and areawise sedation.

Surgeries/Surgical procedures were painful and extremely dangerous because humans are being treated by Humans. Hence, Anatomy plays an important role in Ancient India where the present form of techniques like X-Rays, MRI Scans, Robotic Surgeries and such other methods and techniques that are being used to minimize the skill and efficiency of human beings; but where as in Ancient India during the period of Achyarya Sushruta, when the anatomy of knowledge is limited and non availability of modern techniques to classify the disease/discomfort, the Acharyas like Sushruta have developed such techniques and instruments in identifying and removing discomfort of a patient. It is a great thing that people like Acharya Sushruta have classified the surgical procedures and the types of sedation that are being used in herbal medicines are the rarest of rare knowledge that was passed on to the present generation and based on which the modern anesthetic principles are developed. The effects of anesthetic ingredients that are being used in those days with alcohol and the extracts of the medicinal plants are tabulated below:

TABLE 1. Comparisons Between Stages Of Anesthesia And Stages Of Alcohol.

Stages of Anaesthesia	**Characteristics**	**Stages of Alcohol Effect**	**Characteristics**
Stage of Analgesia (First Stage)	• Gradual loss of pain sensation and consciousness	**Euphoria**	• Decreased self-consciousness • Diminished attention • Beginning sensory-motor impairment • Impaired fine muscle coordination • Reduced efficiency in performance tasks
Stage of Excitement/Delirium (Second Stage)	• Unconscious excitement • Irregular breathing with shouting, breath-holding, coughing	**Excitement**	• Sedation • Impaired perception, memory, comprehension • Decreased sensory response • Increased reaction time • Blurred vision, reduced visual acuity • Sensory-motor incoordination • Drowsiness, ataxia
Stage of Surgical Anaesthesia (Third Stage)	• Fully unconscious • No pain • No movement when stimulated		
Plane 1: Light Anaesthesia	• Smooth, automatic respiration (like sleep) • Eyeball rolling stops • Light reflex sluggish • Conjunctival reflex abolished	**Confusion**	• Apathy, lethargy • Dizziness • Increased pain threshold • Increased muscular incoordination • Impaired senses • Visual and perception disturbances • Increased ataxia
Plane 2: Real Surgical Anaesthesia	• Deeper respiration • Complete muscular relaxation • Corneal reflex abolished	**Stupor**	• Impaired consciousness • General inertia • Respiratory depression (life-threatening) • Decreased heart rate • Sleep/stupor • Severe ataxia • Loss of motor functions • Decreased response to stimuli • Vomiting risk (aspiration) • Urinary incontinence • Anterograde amnesia • Risk of coma or death

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Plane 3: Deep Anaesthesia	• Triphasic respiration • Light reflex disappears completely	**Coma**	• Complete unconsciousness • Depressed/absent reflexes • Subnormal body temperature • Impaired circulation • Incontinence
Plane 4: Profound Anaesthesia	• Increasing pause between inspiration and expiration • Gasping respiration • Severe respiratory depression • Markedly decreased heart rate		
Fourth Stage	• Period between respiratory arrest and cardiac failure • Heart beats but respiration stops • Pupils widely dilated	**Death**	• Respiratory arrest • Central nervous system failure leading to death

As already mentioned above, sedation ranges from general anesthesia, local anesthesia and analagesia and the herbal origins of sedatives have been extensively used for pain management and to keep the patient under sedation. Most of the Acharyas in those days brought a person under sedation they used to administer vapour inhalation and an established method in special circumstances to attend chest and respiratory complaints. The importance of vapour inhalation is if such substances are inhaled instead of taken inside will act quickly and bring the patient under sedation. To conclude this article tried to bring out relevant points in ancient India that are being used and administered for pain management and bring the patient under control.

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