

Sushruta

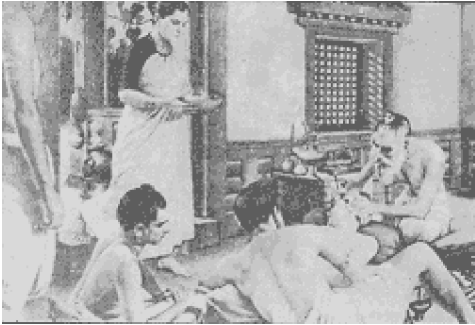
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Sushruta was an ancient [Indian surgeon](#) (who was possibly born in [7th century BC](#)) and is the author of the book *Sushruta Samhita*, in which he describes over 120 surgical instruments, 300 surgical procedures and classifies human surgery in 8 categories.

In the Sushruta school, the first person to expound Āyurvedic knowledge was Dhanvantari who then taught it to Divodasa who, in turn, taught it to Sushruta, Aupadhenava, Aurabhra, Paushakalāvata, Gopurarakshita, and Bhoja.

He is credited with performing [cosmetic surgery](#) and especially with using forehead skin to reconstruct noses which were amputated as a punishment for crimes in his era.

In ancient India Medical Science supposedly made many advances. Specifically these advances were in the areas of plastic surgery, extraction of cataracts, and dental surgery. There is documentary evidence to prove the existence of these practices.



An artist's impression of an operation being performed in ancient India. In spite of the absence of anesthesia, complex operations were performed.

The practice of surgery has been recorded in India around 800 B.C. This need not come as a surprise because surgery (Shastrakarma) is one of the eight branches of Ayurveda the ancient Indian system of medicine. The oldest treatise dealing with surgery is the Shushruta-Samahita (Shushruta's compendium). Shushruta who lived in Kasi was one of the many Indian medical practitioners who included Atraya and Charaka.

Shushruta was one of the first to study the human anatomy. In the ShushrutaSamahita he has described in detail the study of anatomy with the aid of a dead body. Shushruta's forte was rhinoplasty (Plastic surgery) and ophthalmology (ejection of cataracts). Shushruta has described surgery under eight heads Chedyā (excision), Lekhya (scarification),

Vedhya (puncturing), Esya (exploration), Ahrya (extraction), Vsraya (evacuation) and Sivya (Suturing).

Ophthalmic Surgery:

Shushruta specialized in ophthalmic surgery (extraction of Cataracts). A typically operation performed by Shushruta for removing cataracts is described below. "It was a bright morning. The surgeon sat on a bench which was as high as his knees. The patient sat opposite on the ground so that the doctor was at a comfortable height for doing the operation on the patient's eye. After having taken bath and food, that patient had been tied so that he could not move during the operation."

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"The doctor warmed the patient's eye with the breath ~ of his mouth. He rubbed the closed eye of the patient with his thumb and then asked the patient to look at his knees. The patient's head was held firmly. The doctor held the lancet between his fore-finger, middle-finger and thumb and introduced it into the patient's eye towards the pupil, half a finger's breadth from the black of the eye and a quarter of a finger's breadth from the outer corner of the eye. He moved the lancet gracefully back and forth and upward. There was a small sound and a drop of water came out.

"The doctor spoke a few words to comfort the patient and moistened the eye with milk. He scratched the pupil with the tip of the lancet, without hurting, and then drove the 'slime' towards the nose. The patient got rid of the 'slime' by drawing it into his nose. It was a matter of joy for the patient that he could see objects through his operated eye and the doctor drew the lancet out slowly. He then laid cotton soaked in fat on the wound and the patient lay still with the operated eye bandaged. It was the patient's left eye and the doctor used his right hand for the operation."

Does this not sound like the detailed procedure and steps of a cataract operation by an ophthalmic surgeon? But this operation was performed around the 8th Century B.C. by Shushruta.

Anatomy:

Shushruta was not only one of the earliest pioneers in surgery in the world but also one of the earliest ones to study the human anatomy. In his Samahita, he described in detail the study of anatomy with the use of a dead body.

He has described the following in his Samahita, "For these purposes, a perfectly preserved body must be used. It should be the body of a person who is not very old and did not die of poison or severe disease. After the intestine have been cleaned, the body must be wrapped in bast (the inner bark of trees), grass or hemp and placed in cage (for protection against animals). The cage should be placed in a carefully concealed spot in a river with fairly gentle current, and the body left to soften.

"After seven days the body is to be removed from the water and with a brush of grassroots, hair and bamboo it should be brushed off a layer at a time when this is done the eye can observe every large or small outer or inner part of the body, beginning with the skin as each part is laid bare by the brushing."

Plastic Surgery:

Perhaps the greatest contribution of Shushruta was the operation of rhinoplasty (restoration of a mutilated nose by plastic surgery). The detailed description of the rhinoplasty operation in the Shushruta Samahita is amazingly meticulous and comprehensive. There is evidence to show that his success in this kind of surgery was very high, which attracted people from all over the country and perhaps even from outside. Cutting off of the nose and ears was one of the common modes of punishment in the early Indian kingdoms.

Shushruta moved by his intense humane approach to life and equipped with superb surgical skills, did the operation of rhinoplasty with remarkable skill, grace and success. The details of the steps of this operation, as recorded in the Shushruta Samahita, are amazingly similar to the steps that are followed even to-day in such advanced plastic surgery.

Indian medical tradition also goes back to Vedic times when the Ashwinikumars, who were practitioners of medicine were given a divine status,. We also have a God of Medicine called Dhanvantari. In historic times the earliest recorded treatise on medicine in India viz., the Shushruta Samahita is dated around the 8th century B.C. Plastic surgery dentistry operation of cataracts, were pioneering advances, in the field of medicine.

Ayurveda - The Science of Longevity

This is the indigenous system of medicine in India. Ayurveda literally means 'the science of living' (longevity). Ayu means life and Veda means knowledge. The origins of this

system of medicine are lost in the hoary past, and the body of knowledge that comes under the heading Ayurveda constitutes ideas about diseases, diagnosis and cure, which have been accumulated over the ages past.

The feature that distinguishes this system of medicines from other systems like Allopathy and Homeopathy is that it is solely based on herbs and herbal compounds. This it shares in common with the ideas on this area in tribal societies. But what makes Ayurveda, a scientific art of healing is its disassociation from the magical aspect which tribal forms of healing normally have. Hence the practitioner of Ayurveda could never degenerate to the level of a shaman or witch-doctor. Hocus pocus and voodoo which are still widely prevalent in rural India could not become a part of Ayurveda as it always retained a physical link between the disease and its cure.

According to Charaka, a noted practitioner of Ayurveda in ancient India: "A physician who fails to enter the body of a patient with the lamp of knowledge and understanding can never treat diseases. He should first study all the factors, including environment, which influence a patient's disease, and then prescribe treatment. It is more important to prevent the occurrence of disease than to seek a cure".

These remarks may appear rudimentary today, but they were made by Charaka, some 20 centuries ago in his famous Ayurvedic treatise Charaka Samahita. The treatise contains many more such remarks which are held in reverence even today. Some of them are in the fields of physiology, etiology and embryology. Charaka was the first physician to present the concept of digestion, metabolism and immunity.

According to him a body functions because it contains three dosha or humours, namely, bile, phlegm and wind. These dosha are produced when dhatus, namely blood, flesh and marrow, act upon the food eaten. For the same quantity of food eaten, one body, however, produces dosha in an amount different from another body. That is why one body is different from another. For instance, it is more weighty, stronger, more energetic, Further, illness is caused when the balance among the three dosha in a human body is disturbed. To restore the balance Charaka prescribed medicinal drugs.

Charaka also knew the fundamentals of genetics. For instance, he knew the factors determining the sex of a child. A genetic defect in a child, like lameness or blindness, he said, was not due to any defect in the mother or the father, but in the ovum or sperm of the parents which is today an accepted fact.

Under the guidance of the ancient physician Atreya, another physician named Agnivesa had written an encyclopedic treatise in the eighth- century B.C. However, it was only when Charaka revised this treatise that it gained popularity and came to be known as Charaka-samahita. For two millenniums it remained a standard work on the subject and was translated into many foreign languages, including Arabic and Latin.

The medical system of Ayurveda draws heavily from the doctrines developed in the Charaka-Samahita. The main quality which Ayurveda has borrowed from Charaka is its

aim of removing the cause for illness and not just curing the disease itself. In Ayurveda there are no such things as instant relievers, pain killers or antibiotics. The herbs used in Ayurvedic remedies do not operate against the body's metabolism, their effect is registered gradually and hence there are minimum side-effects. The constituents of Ayurvedic medicines are largely based on organic matter. The absence of fast registering inorganic compounds which are at times corrosive, contributes to the absence of side-effects from Ayurvedic medicines.

This art of healing had been held in high esteem in ancient India. It was elevated to a divine status and Dhanvantari the practitioner of this art was deified as the God of Medicine. Even ordinary practitioners of this art - the Ashwinikumars - were given a special status in mythology and folklore. Although very few ancient texts are available today, this method of healing was systematized in early times. The fact that the term Veda was attached to this body of thought testifies to this.

Knowledge of this art was spread among sages, hermits and medicos who roamed from place to place. Those who practiced solely this art were called Vaidyas and they generally belonged to the Brahmin caste. Knowledge of this art was passed from generation to generation. But it remains surprising how this vocation did not obtain the status of a separate caste.

The absence of a caste, wherein this body of ideas could get crystallized and changeless which incidentally could ensure their preservation, along with the absence of a system for regular education and training for practitioners of the art has resulted in its gradual though partial withering over a period of time. The above two lacunae also resulted in the emergence of quackery and made it difficult to distinguish bonafide practitioners from quacks in absence of professional standards. These lacunae have been identified in modern times and recently, organized efforts have been launched to revive and nourish this flagging discipline