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Contribution of *Sushruta* towards Anatomy

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ABSTRACT

Sushruta a surgeon of ancient Indian medicine has made significant contributions to various branches of *Ayurveda*. *Sushruta* a father of Indian surgery. Probably his exhaustive knowledge of basic sciences he would have made as a great surgeon. He performed various surgeries shows his brilliant knowledge of anatomy in those days. This article been complied the contributions of this great branch and interprets his perspective knowledge towards Anatomy.

Key words: *Sushruta*, Anatomy, Surgery, *Ayurveda*

INTRODUCTION

Sushruta popularly known as father of surgery his contribution to anatomy and various branches of *Ayurveda* shows *Sushruta* was a great anatomist later on many scholars from India abroad have made significant contributions in the field of anatomy. Anatomy is widely appreciated as being part of medical education. Learning anatomy through cadaver dissection and explosion of knowledge in the field of medical education.

Around 600BC *Sushruta* a disciple of Lord *Dhanavantari* learned *Ayurveda* specially *Shalya Tantra* and other allied sciences of *Ayurveda*. The most credible compilation of his contribution are available in a

treatise called "*Sushruta Samhita*"

A comprehensive compendium having 184 chapters with 6 *Sthanas*. The third *Sthana Shareera Sthana* entirely deals with human anatomy.^[1]

Contribution of *Sushruta* towards - Embryology

Sushruta was the first person deal with human embryology and then of human body.

He explained rudiments of embryology and human anatomy together along with obstetrics to interpret the clinical importance.

Sushruta ancient Indian surgeon having the wide knowledge about the various congenital abnormalities - (diseases) and also their specific treatment.

In *Shareera Sthana* describes the sequential development of the structures of the fetus in month wise and describes *Sapta Twachas* (layers of skin with their names) specific diseases in each layer in a scientific manner. He was much aware of genetic inheritance, mentioned various congenital defects acquired from parents results or affects over the maternal and paternal components (*Matruja* and *Pitruja Bhavas*) due to *Bija Dosha* (defects in the sperm and ovum) - affects the *Bija Bhaga Awayava* (chromosomes) along with their *Papakarmas* - targets the fetus organ defects will results.^[2]

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Those days doesn't have any aid of investigations *Sushruta* a great surgeon proficiency he accomplished just by his mere *Pramanas* i.e., only by observation (*Pratyaksha Pramana*).

Contribution of Embalming, Preservation and Dissection of dead body

Shareera Sthana of *Sushruta Samhita* dealt with human cadaver dissection as evident from *Samhita*. He explained systematic method for the dissection of human cadaver. *Sushruta* considers that aspiring surgeon must first be an anatomist skillful and successful practice.

To learn medical science, one must know about human body structure, In this regard *Sushruta* was the first person who established the preservation of deceased body and dissection procedure in scientific manner.

Sushruta explains the method of preserving the dead body and preparation before dissection. To acquire a thorough knowledge of anatomy must prepare a dead body and carefully observe and examine all its parts.

The method of study was to submerge the body in flowing water and allow it to decompose

An examination of the decomposing body was carried out intervals to study structures layer by layer in detail.^[3]

Selection of dead body for Dissection

For dissecting purposes a cadaver should be selected which has all of parts of the body present.

- A person who had not died due to poisoning.
- A person not suffered from chronic disease.
- A person had not attained 100 years of age.
- A person which the fecal contents of the intestine have been removed.

Techniques of preservation of dead body

All parts are wrapped by any one of *Munja* - (grass or brish) bark, *Kusha* and flax etc. And inside a cage, should be put in a slowly flowing river in allow to decompose in an unlighted area. After proper decomposition for seven nights, the cadaver should be

removed from the cage and then dissected slowly by rubbing it with the brushes made out of any fragment roots of plant - *Ushira*.

Hair, bamboo should be used. The human body could be visualized in detail by this way (1973).^[4]

Sushruta's approach towards Gross Anatomy of the body

Complete knowledge of human body e.g., arteries, veins (scrotus fluid carrying channels), urinary system (*Mootravaha Srotus*), respiratory system (*Pranavaha Srotus*), circulatory system (*Rasa Raktavaha Srotus*) etc. *Kostanga's* abdominal organs detail explanation about *Agnashaya*, *Pakvshaya*, *Mutrashaya*, *Hrudirashaya*, *Hrudaya*, *Unduka Puccha*, *Puppusa* etc. are explained.^[5]

Sushruta had a depth knowledge about plastic and reconstructive surgical techniques and good knowledge of different *Sandhan Karmas*.

Sushruta and his contribution towards ENT he had the vast knowledge of eye and their *Mandalas*, ear and its parts, nose and its anatomical explanations compare with the modern explanations are indeed.^[6]

Sushruta a pioneer of modern surgeon had surgical skills of laparotomy, paracentesis of abdomen, surgeries of urinary system, ophthalmic surgeries, reconstructive surgeries, orthopedic surgeries are copied by the ancient surgical skills, gynecological and obstetric surgeries and so many general surgical one of the most important contribution of *Sushruta* described 101 number of *Marmas* (vital spots) in the body causes fatal results on injury leads to death or deformity.

Contribution of Sushruta towards Skeletal Anatomy

Sushruta a surgical man deserves various contributions towards the skeletal anatomy.^[7]

- Total number of bones
- Classification of bones - *Valaya*, *Ruchika*, *Nalak* etc.
- Types of fractures
- Types of joint dislocations
- Sprains

- Their healing process
- Proper rehabilitation
- Various devices are used to manage the burns injuries.

This accuracy shows that his keen observations over the specific system and apply the anatomical knowledge gather into practice (1970).

Sushruta father of surgery and his writings of many surgical procedures from ancient Indian literature show his vast knowledge about the human.

Invasion by so many empires over the India deserves its own originality. Ancient Indian surgery.

Contribution of Sushruta towards Neuro Anatomy

A surgical man gifted neuro surgery and detail knowledge about the nerves and its functions explained in a practical manner.^[8]

Pair of nerves each response to sound, touch, vision, taste and smell. Two nerves back of ear (*Vidura*) if cut produces deafness. A pair of nerves inside the two nostrils which causes anosmia.

A pair of two nerves below the end of the eyebrows if cut of these nerves causes blindness.

Sushruta considered the head as the center of all functions. He also explained various chapters of his book on neurological disorders like hemiplegia, epilepsy, fainting, stiff neck and many more disorders.

CONCLUSION

Sushruta father of surgery and his writings on many surgical procedures surgical procedures from ancient Indian literature show his deep knowledge towards human anatomy. Anatomy is an obviously essential for every surgeon to gain the knowledge human anatomy cadaver dissection is needed to become a skilled surgeon. *Acharya Sushruta* ancient Indian surgeon his

contribution towards each and every branch about *Ayurveda*. Significant anatomical consideration of ancient Indian literature, compiling evidence suggesting that the knowledge of human anatomy revealed by both inspection of the surface of the human body through human cadaver dissection. The contribution of ancient civilizations to our modern understanding are well appreciated. The anatomical knowledge gleaned from receiving such ancient Indian texts.

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