

The Crossroads of Hellenistic and Indian Anatomical Knowledge.

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Abstract:

Most of the Western literature praise Greek civilization and medicine, to which they owe their origin and in doing so, they have conveniently and consistently ignored the contributions of India. The primary focus of this historical review is centered on Sushruta's and Hippocrates contributions to the field of medicine. Sushruta, considered to be "Father of Plastic Surgery" is renowned for his unparalleled teachings of anatomy, pathophysiology and unique therapeutic strategies. He is widely known for nasal reconstruction, which is clearly evident when we trace historical literature from his depiction within the ancient period of Hindu medicine to the era of Renaissance Italy and finally upto the modern-day surgical practices. Hippocrates, who is regarded as the "Father of Western Medicine", is credited with the introduction of the concept of 'physis' and was thus responsible for the transformation of hieratic or theocratic medicine into rational medicine.

Key Words: plastic surgery, Sushruta, nasal reconstruction, Hippocrates, rational medicine

INTRODUCTION

The main reason of world's ignorance regarding the achievements and contributions of the ancient Indians in the field of medicine is not due the lack of literature but primarily due to the strong belief among a majority of Western medical historians that ancient Indian medicine has made no contributions and also has nothing to contribute to the evolution of modern medicine, 'Scientific medicine began with the Greeks' is an obsession of Western historians of medicine.¹ The ignorance and more significantly, the indifference prevailing in India among the members of the medical profession in general and of the teachers of medicine, in particular, with regard to the rich heritage of India, in matter of public health and medicine can be partly attributed to the type of education they received under the British rule and later when the same pattern of education followed by India.² Some notable Western authors have adopted an offensive stance by attacking the antiquity of traditional Indian medicine by a repeated questioning of the dating of compilation and originality of Vedas, and the Samhitas (Charaka & Sushruta). Western historians have taken great pains to emphasize that the treatise, Charaka Samhita is a result of contributions by many other Indian authors, up to 6th - 7th century AD, thereby, also

establishing Ayurveda/ Charaka Samhita as works that are not so old. They conveniently ignore the fact that such comments have also frequently been made about the works of Hippocrates (that it was a result of the work of many contributors). But they never questioned the antiquity and authenticity of Corpus Hippocraticum. Such leniency has not been conferred on the Indian treatises. Sushruta and Hippocrates are two prominent figures in the history of medicine. They both made significant contributions to the field and are considered pioneers in their respective regions. While Sushruta was an ancient Indian physician, Hippocrates hailed from ancient Greece. A comparative study of these two influential figures reveals the following details:

Background and Time Period:

Sushruta: Sushruta, also known as Sushruta Samhita, is believed to have lived around the 6th century BCE in ancient India. He is often regarded as the father of Indian surgery and is associated with the Ayurvedic tradition.

Hippocrates: Hippocrates was a Greek physician who lived around the 5th century BCE. He is often referred to as the father of Western medicine and is associated with the Hippocratic Corpus, a collection of medical writings attributed to him.

Contributions:

Sushruta: Sushruta made significant contributions to various medical fields, particularly surgery. He authored the Sushruta Samhita, an ancient Indian text that covers a wide range of medical knowledge, including surgical techniques, anatomy, and the use of herbal medicines. Sushruta introduced innovative surgical procedures, such as rhinoplasty (reconstructive surgery of the nose), ophthalmic surgery (including cataract extraction), lithotomy (removal of bladder stones), and plastic surgery for facial reconstruction.

Hippocrates: Hippocrates focused on observing and documenting diseases, symptoms, and their natural progression. He emphasized the importance of clinical observation and introduced the concept of "Hippocratic Oath," a code of ethics for physicians. This oath emphasizes principles such as patient confidentiality, medical confidentiality, and ethical conduct in the practice of medicine. It laid the foundation for medical ethics that still influences the profession today. Hippocrates also developed a holistic approach to medicine, emphasizing the balance of bodily humors and the influence of the environment on health.

Medical Philosophy:

Sushruta: Sushruta's approach to medicine was rooted in the Ayurvedic tradition, which emphasized the balance of three doshas (vata, pitta, and kapha) in the body. He believed that

disease resulted from an imbalance of these doshas and aimed to restore equilibrium through various treatments and surgical interventions.

Hippocrates: Hippocrates' approach was more empirical and based on naturalistic observations. He believed in the concept of "humoral theory," which postulated that an imbalance of bodily fluids (blood, phlegm, yellow bile, and black bile) caused disease. His philosophy focused on promoting a healthy lifestyle, diet, and environmental factors for maintaining overall well-being.

Surgical Techniques:

Sushruta: Sushruta's surgical techniques were highly advanced for his time. He developed instruments, such as scalpels and forceps, and described various surgical procedures, including plastic surgery, lithotomy, and fracture management. He advocated cleanliness, asepsis, and proper wound care to prevent infection and promote healing.

Hippocrates: While Hippocrates did not specialize in surgery, he did perform minor surgical procedures, such as wound suturing and setting bone fractures. However, his emphasis was more on non-invasive treatments and managing diseases through natural means, including diet, exercise, and lifestyle modifications.

Legacy and Influence:

Sushruta: Sushruta's contributions to medicine had a lasting impact, particularly in the field of surgery. His techniques and principles formed the foundation for the development of surgery in ancient India and later influenced surgical practices in neighboring regions, such as Persia and the Arab world.

Hippocrates: Hippocrates' influence on Western medicine is profound. His emphasis on clinical observation, ethical standards, and the holistic approach to medicine laid the groundwork for the development of modern medical practice. The Hippocratic Corpus served as a reference for centuries, and the principles outlined in it still resonate with medical professionals today. Although it is debated whether all the writings attributed to Hippocrates were indeed his, the Hippocratic Corpus is a collection of medical texts associated with his name. It covers a broad range of medical topics and reflects Hippocrates' approach to medicine.

The Western Bias

Some eminent and contemporary historians like Roy Porter have brazenly admitted not giving due prominence to older systems of non-Western medicine and for mainly focusing on Western medicine claiming that Western medicine has developed in ways which have made it uniquely

powerful and ultimately global, because it is perceived by societies and experienced by the sick to 'work' uniquely well, at least for the major classes of disorders. His list of medical intellectuals includes - Apollo, Asclepius, Hippocrates, Galen, Paracelsus, Vesalius, Harvey and Virchow, but there was no mention of Indian, Chinese or Arabic contributions.³ Goerke and Stebbins (1968) also in their chapter on 'Historical Development of Public health' only heap praise on the spiritual cleanliness and community responsibility among the Hebrews, while making no mention of India and China.⁴

Dunglison (1966) and Buck (1966), opined that Hindus has poor knowledge of pathology, attributing worms as the cause of all skin diseases and the underlying reason for every other disease to be one of the three principles causes, namely "wind, vertigo and change of humors."^{5,6} It is ironic that while these authors denounced Hindus for their belief in the theory of three humors, they have conveniently ignored the fact that the Greeks also had a famous four - humor theory which they attributed as they underlying cause of every disease condition. Porter (1999)⁷ however attempts to glorify the humoral theory but credits the Greeks for discovering analogies between 4 external elements in nature – air, wind, fire and earth and four body humors (yellow bile, black bile, blood, phlegm) and developing 'humoral medicine' which emphasized on a balance between the external factors and internal humors to achieve perfect health. He also failed to mention that parallel beliefs existed both in Chinese and Indian medical traditions around the same period, if not earlier. Porter (1997) writes about India and China - "Each area of globe has created a medicine of its own. Indian and Chinese medicine believed in glorification of the tradition, great durability and did not encourage innovation. Both proved tenacious and encouraged the myth of an essential unchangingness, so both continued in place and experienced a tense and ambiguous encounter with Western scientific medicine and were compelled to take aspects of it on board."

Green and Anderson (1984) in the begin their book, with the Egyptian and Babylonian health practices that existed while giving a detailed account of the history of public health. Like the other historians, he made no mention of the contributions made by either the Indian or Chinese civilization. However, he did make a passing reference to India towards the end of the paragraph dealing with Greece, where he eulogized the Greeks, claiming theirs was a race that was not influenced by others - "The Greeks did not borrow from other nations. The Hindus of ancient India practiced surgery for at least a century, but there is no evidence that Greeks used the Hindu methods of surgery despite Alexander's conquests on the Indian subcontinent."⁸ This miserly account crediting India for a medical advancement like surgery was only a reflection of the biased attitude most Westerners had for India and its achievements. Even Osborn (1964),⁹ a medical historian, stated that the the Egyptian, the Babylonian and the Peruvian civilizations made the greatest contribution to the 'healing arts' and described Susruta as a "renowned physician" and went on to suggest that Hindu medicine probably may have exerted more influence on developments in Eastern civilizations rather than upon Western civilizations.

In contrast to the biased descriptions of other Western authors, Sigerist (1987a, b)¹⁰, an eminent medical historian, stated that, medicinal practices originated not only in Egypt and Mesopotamia but in India and China as well⁹. Even though the Egyptian and Babylonian medicine have run their course and no longer exist, both ancient Indian and Chinese medicine still exist and are actively practiced by millions the world over, furthermore both these traditional systems of medicine have even garnered renewed interest in the international community. He drew a comparison between the Greeks and Indians when he pointed out that the Greek laid emphasis on reason and logic (and later paved the way for Western science), while the Indians also possessed a rational system of medicine, but also had another “mystic approach” to address the states of health and disease, and therefore they were more well prepared to handle both mental and spiritual troubles. The practice of yoga and meditation as a therapeutic method was unknown to the West. Sigerist (1987) emphatically reiterates that the history of medicine should not be approached from the usual narrow Western view but a universal view wherein Indian medicine deserves to be given full attention. Sigerist’s words clearly indicate that he was fully aware of the bias against India and offered a more balanced view in its stead.

Apart from Sigerist, the medical science of Indo-Aryans was accepted by both, pre-Islamic as well as post-Islamic Arabs and through them, travelled as far as Asia minor and Greece and finally influenced the Canadian school of Medicine. Kutumbiah (1962)¹² firmly denies any Hellenic influence on Indian civilization - 'it has always been warmly debated by European scholars who naturally desire to find links connecting the unfamiliar doings of isolated India with the familiar Greek ideas and institutions to which Europe owes so much.' 'The most important and fundamental borrowing (by Indian from Greeks) is alleged to be the humoral theory, but there are references to humors at Buddha's time and even in Rig veda. So, this allegation is wrong.'

It is also evident from historical records that Greek medicine had adopted many Indian medicaments. The two civilizations became intimately connected through Alexander’s invasion and persisted through the reign of Diadochi as well as the Roman and the Byzantine eras. Greek, Roman and Byzantine authors make frequent mentions of various Indian physicians as well as diverse means and methods of healing. Furthermore, the use of knife, fumigation and cauterization procedures that have been found in Greek medical practice were distinctly of Indian origin, just as the Greek *materia medica* had many Ayurvedic drugs cardamom, guggul, sesame, etc., all of which are from India.

History shows that Hippocrates, who was born in Cos, (an offshore Asian island), received a part of his medical training in Cnidia (Asia Minor), and since he was Asiatic by birth, he must have possessed definite knowledge of Indian medicine that was prevalent during his life and therefore it could be justifiable to assume that the curriculum Hippocrates was taught may have had more

of Indian medicine than Greek medicine. Major (1954) addresses the Greek - Indian controversy in 'Ctesias of Cnidos, and mentions that a contemporary of Hippocrates visited India wrote a treatise on Indian medicine and praised Indians as more skilled in treatment of snakebites.¹³ The similarities between Indian and Greek medicine are glaringly obvious, hence it is of no great surprise that the authenticity of the former has been frequently questioned or even denied. However, taking into consideration the outstanding independent achievements of the Indians in most branches of science and arts as well as their aversion to foreign influences, recent discoveries point out that the trend of opinion nowadays, weighs heavily in favor of the originality of Indian medicine in its most salient features.¹⁴

Medical science has grown leaps and bounds and all the methods and techniques prevalent in the world today can be rightly considered as a by-product and amalgamation of the thoughts, belief systems and proven practices that originated in ancient India, China, Arabia and Persia. The heights scaled and the achievements made by modern medical science of today cannot be attributed to the efforts of a single person, race or even a nation. It is undoubtedly the result of the concerted efforts of many human beings living in the various corners of the earth during various time periods and civilizations. In that sense, every nation has contributed in some significant way to the development of medicinal practices and India, like other civilizations has also done its bit, therefore, it is only fitting that justice to India should be ensured every time the history of medicine is studied and discussed.

In conclusion, Sushruta and Hippocrates were two remarkable figures in the history of medicine who made significant contributions to their respective traditions. While Sushruta focused on surgical techniques, anatomical understanding, and herbal medicine within the Ayurvedic framework, Hippocrates emphasized clinical observation, the humoral theory, holistic approaches to medicine and ethical standards for physicians. Both Sushruta and Hippocrates made significant contributions to the field of medicine and their work and ideas continue to inspire and shape the practice of medicine in various parts of the world to this day.

Endnotes

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²Subba Reddy, DV (Ed.) 1966 *Western Epitomes of Indian Medicine*, Hyderabad, Govt. Central Press.

³Porter, R 1999, *The Greatest Benefit to Mankind - A Medical History of the Humanity from Antiquity to the Present*. London, Harper Collins Publishers.

⁴Goerke, LL & Stebbins. EL 1968 *,Mustard's Introduction to Public Health*. 5th edition. New York. The Macmillan Co.

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⁶Buck, AH 1966, The Growth of Medicine from the Earliest Times to about 1800. In. Subba Reddy, DV (Ed) Ibid.

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⁸Green, LW and Anderson CL 1982, *Community Health*. 4th edition, The CV Mosby Company, London.

⁹ Osborn, BM 1964, *Introduction to Community Health*. Boston, Allyn and Bacon Inc.

¹⁰ Sigerist, HE 1987a, *A history of Medicine*. Vol. I. Primitive and Archaic Medicine. N.Y. Oxford University Press.

¹¹Sigersit, HE 1987b *A History of Medicine*. Early Greek, Hindu and Persian Medicine. Vol. II., New York, Oxford University Press.

¹²Kutumbiah, P 1962 *Ancient Indian Medicine*. Calcutta, Orient Longmans.

¹³Major, RH 1954, *A History of Medicine*.

¹⁴Davis, NS 1966 *,History of Medicine and Code of Medical Ethics*. pp. 80-108. In. Subba Reddy DV (Ed) Ibid.