

Unveiling Ayurveda: A Historical Study of its Evolution in Ancient India through Archaeological Evidence

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ARTICLE DETAILS	ABSTRACT
Research Paper Received: 20-07-2026 Accepted: 19-08-2026 Published: 25-09-2026 Keywords: <i>Archaeology, Ayurveda, Anatomy, Surgery, Historical review</i>	This research paper delves into the evolution of medical knowledge in ancient India, viewed through the lens of archaeological evidence. The development of any scientific system is a continuous process, and therefore requires constant historical re-evaluation. There is no question that Ayurveda is a genuine system of medicine as per scientific standards. The Ayurvedic texts include comprehensive explanations of sophisticated technical skills like surgery; therefore, Ayurveda is more than just the study of medicinal herbs. These works contend that understanding the human body is crucial to practising medicine. The development of anatomical knowledge in ancient Indian cultures thus becomes a particularly fascinating subject. The structural outlines of a lot of animals are depicted in a variety of rock paintings, particularly those referred to as "X-ray type depictions," which have been covered in this paper. In addition, this paper incorporates a brief review of the development of surgical instruments required for operative procedures, as well as medical evidence derived from human fossils. There is a lot of archaeological evidence to prove that Ayurveda, the Indian medical tradition, is one of the oldest systems of medicine in the world. Evidence

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of varied medical practices in India dates back to the Stone Age. In order to describe the evolution of the main areas of Ayurveda, particularly anatomy, surgery, and pharmacology, this research paper looks at significant medical discoveries from the Stone Age to the Historical period throughout the Indian subcontinent.

Introduction

Every topic pertaining to the evolution of humanity on Earth is worthwhile to research. Historical review of the evolution of the barter system, knowledge of economics and commerce, the emergence of the administrative system, art and architecture, and human scientific viewpoint are equally crucial. Since ancient times, India has advanced in every area of human growth. India has always served as a global resource on important topics, including philosophy, spirituality, art, and information on the ideal way of life. India's knowledge legacy extends beyond topics like yoga and spirituality; it has left its imprint on every scientific field worldwide. Numerous topics, including astrology, mathematics, astronomy, chemistry, physics, geography, architecture, as well as biology and medicine, are covered in ancient Indian books.

Finding the world's and humanity's origins as well as the purpose of human life is the primary goal of all science, philosophy, and spirituality-related studies. Humans have been attempting to feed this interest since ancient times using a variety of topics and techniques. Humans become more interested in self-observation as they distance themselves from the physical world, and all the subjects related to biology play a significant part in satisfying this curiosity. The genesis of the entire living world is investigated with the aid of biology. This topic has also given rise to medical science. Medical science began as a result of human curiosity about their origins and efforts to treat mental and physical illnesses.

The emergence and development of all the subjects mentioned above is a continuous process. Hence, they must have originated before being compiled in written texts. Archaeology is the only resource for those subjects related to human development for which evidence cannot be obtained through literature (Renfrew & Bahn, 2012, p. 13). In this chapter, the untouched evidence related to the origin of Ayurveda in ancient India has been discussed, which can be of special help in the historical study of the development of Ayurveda from a scientific perspective.

It is known from studying ancient Indian history that Indian sages have contributed immensely to the area of medicine. 'Ayurveda' is the name of the Indian medicinal system, which India has gifted to the globe. The ancient Indian medical system does not seem to be any less effective than the contemporary medical system



when seen from a scientific perspective. Charak has referred to Ayurveda as the "science of life" (Dash & Gupta, 1997, p. 34). He claims that Ayurveda has always been dominant and that people have occasionally absorbed it in their own unique ways all across the world. This fact appears to be accurate based on the historical information about medicine worldwide described above. According to Indian philosophy, Ayurveda is the fifth Veda independent of the four Vedas.

It is also important to note that the Vedas are India's earliest literary sources and offer the finest means of observing every facet of Indian society from a historical research standpoint. Numerous Suktas that discuss medicine and health-related consciousness in society may be found in the Vedic literature even before the Ayurvedic writings. But how this outstanding medical system, which we call Ayurveda, appeared or how it developed is the basic question of this chapter. The process of the development of medical qualities in primitive humans even before the Vedic Suktas has been observed in this chapter, and for this, every possible help of archaeological evidence has been taken.

To facilitate study, the history of the origin and development of Ayurveda in ancient India has been divided into the following periods from archaeological and historical perspectives.

1. Pre-Historic Period
2. Proto-Historic Period
3. Historic Period

The development status of Ayurveda, or medicinal characteristics in people, during these particular times has been examined while defining and illustrating these particular periods.

Objectives

This research aims to search for archaeological evidence and, with its help, conduct a historical investigation, analysis, and study of the development of Ayurveda. This includes:

1. Identifying evidence that could be helpful in the evolution of Ayurveda from an archaeological standpoint.
2. Observing the evidence related to the development of Ayurveda and comparing it with the current Ayurvedic texts.
3. Classifying all the archaeological and literary evidence related to the evolution of Ayurveda systematically and arranging it chronologically.



4. Examining how these discoveries could affect our comprehension of medical knowledge, symbolic conduct, and early human cognition.

By achieving these objectives, the study seeks to shed light on early Indian societies' cultural and cognitive capacities as well as their contributions to the development of medical knowledge. The primary medical achievements of the early Indians have been included in the research to provide a historical and archaeological reassessment of the evolution of Ayurvedic knowledge.

Methodology

This study on the evolution of Ayurveda in ancient India uses a multidisciplinary research style that combines techniques from medical history, anthropology, and rock art archaeology. This all-encompassing approach allows a careful analysis of the subject from several angles. A thorough literature review is the initial stage. This involves carefully reviewing the current state of research on Ayurveda in ancient India, with particular emphasis on archaeological data. To comprehend the current Ayurvedic knowledge of the day, the review also delves into old Indian medicinal sources, such as Ayurvedic literature.

The evidence used for this study has been collected and observed with the help of various research papers, dissertations, and research articles found on the internet.

Insights about how Ayurveda evolved throughout time

The primary evidence related to human evolution is related to prehistory. Hence, to study the evidence related to the development of Ayurveda in ancient India, there is a need to find evidence of the development of medical qualities in ancient India during this period. The term prehistory was proposed by Daniel Wilson in 1851 (CLERMONT & SMITH, 1990, p. 97) and is also known as pre-literary (McCall, 1973, p. 33). Prehistory refers to the time when a civilisation has been written about by others but has not yet established its own writing system. The only way to learn about human prehistory is through tangible archaeological and anthropological evidence, such as prehistoric artefacts and human bones, as there are by definition no written records of it. Therefore, only archaeological and anthropological evidence seems appropriate for this study. Instead of going into the depth of this topic, it would be better to discuss the present study, so now we will study the diseases and their treatment in prehistoric India and the development of various branches of Ayurveda.

For the historical study of medicinal treatment in ancient India, we will have to take a look at the history of diseases in ancient Indian humans as well. From a global perspective, the first evidence of self-medication



in human history was observed in Neanderthals. The northern Spanish site of El Sidrón revealed a sample of Neanderthal dental calculus that included chemicals from two non-nutritional plants: yarrow and chamomile. These plants are well-known for their therapeutic properties despite their bitter taste and minimal nutritional value (Hardy, Buckley, & Huffman, 2013, p. 873). Between 47300 and 50600 BP, El Sidrón was occupied by Neanderthals (Wood, et al., 2012).

The modern concept of medicine hadn't been heard of. Nonetheless, certain medical diseases were probably treated with the help of natural herbs and plants. It is unknown how effective these therapies were. It's conceivable that some helpful therapies would have been found via trial and error. Herbs had a major role in early ancient Greek culture. It is logical to presume that a large portion of this information would have been gathered in the prehistoric era and disseminated among the different human communities that were developing at the time. Prehistoric man appears to have been capable of performing some basic medical treatments. Setting shattered bones is the most typical example. Archaeological evidence supports the effective setting of shattered bones. Childbirth is one medical operation that has always been necessary. Up until recently, this technique was extremely risky due to the size of a human baby's head. Many women probably passed away during childbirth or suffered from acute weakness as a result of the event. More than any other factor, the difficulties associated with delivery likely contributed to women's life expectancy being significantly shorter than men's. Trepanation, also known as trephining, is arguably the most peculiar (and hazardous) medical practice performed by prehistoric men. This is how a hole is drilled into a person's skull. The reason behind this surgery is unknown. Theories range from driving forth bad spirits to alleviating headaches. Surprisingly, some of these procedures appear to have been successful. Examples of skulls that exhibit some degree of recovery following surgery exist. There have been instances of such procedures carried out in indigenous communities ranging from South America to Africa until recently (The History of Medicine: Pre-history, n.d.).

In the Indian Sub-continent, Social anthropological models and ethnographic research on health made it easier to comprehend how the human body evolves as a result of nutrition, illnesses, newborn mortality, life expectancy, etc. In the study of human skeletons, paleopathology has gained importance as it illustrates physiological stress and health during adaptation to various habitats, economies, and subsistence techniques. Dental abrasions, wear patterns, clavicular bone abnormalities, maxillary sinusitis, vertebral arthritis, and tibial squat facets are a few frequent signs of repetitive activity (Mushrif-Tripathy, 2019, pp. 46-47).

Ayurveda is not limited to medicinal treatment only, but it also includes the departments of surgery, embryology, anatomy, etc. In particular, the archaeological evidence related to anatomy is very important

from the point of view of the historical study of the development of surgery in humans and the development of understanding of the functioning of body parts. Anatomical and physical features of humans and animals are shown in rock paintings found at many Indian archaeological sites. In these Depictions, internal organs are shown, including the rib cage, intestines, stomach linings, heart, lungs, and food pipe. These types of evidence are generally found at Mesolithic sites, which are known for the Rock art Culture (Mesolithic Art, n.d.). For example, (Figure 1) These types of paintings are called X-ray-style paintings because they show the human or animal body's anatomical structure in great detail (Stuart & Thomas, 2017, pp. 3-6).

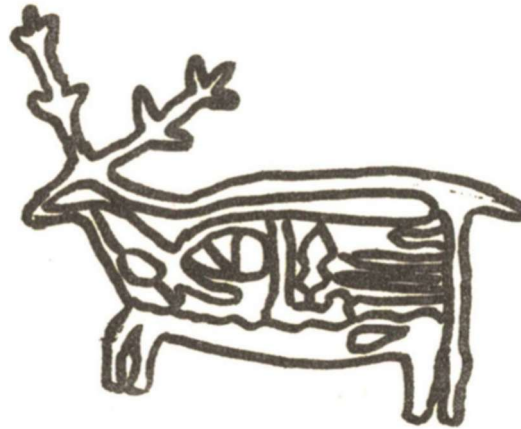


Figure 1: X-ray image of a Sambar (Rucervus duvaucelii), Chattaneshwar (Badam & Prakash, 1992, pp. 69-80)

The skeletal remains from Mahadaha, Uttar Pradesh, having antler decorations on their ears, are an important piece of archaeological evidence for comprehending the history of surgery in India. B.D. Mishra and J.N. Pal excavated this Mesolithic archaeological site in 1979 (Verma, 2016, p. 301). Incising is classified as a surgical procedure in the Sushruta Samhita.

The superior surgical technique used in the Pre-Neolithic (9000 Year ago) civilisation is revealed by the dental evidence gathered at Mehargarh (Figure 2).

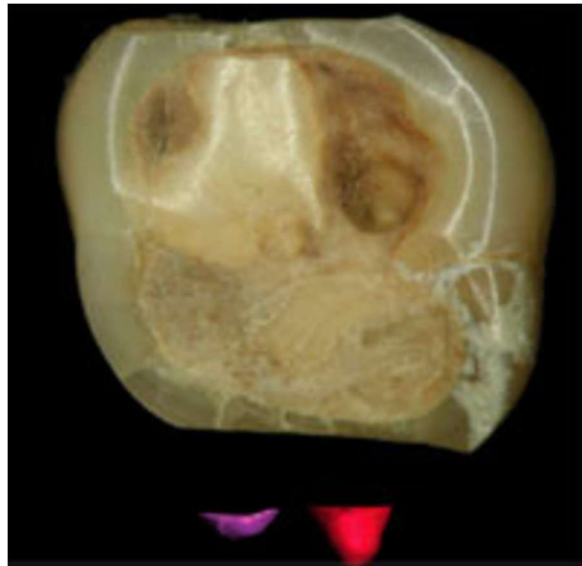


Figure 2: Drilled tooth from Mehargarh (Stone age man used dentist drill, 2006)

First used by the French, the word "La Protohistorique" describes a time period that is between prehistory and the actual historical period. Neolithic Age was the last period of the Stone Age, and in the latter part of the Neolithic period, the Copper-Stone Age, the Bronze Age, and the Iron Age emerged on the Indian subcontinent, respectively. These are collectively called the Protohistoric period. In this sense, the time frame that corresponds to around 7000 B.C. to 600 B.C. in India should be categorised as proto-historic (Kumar, 2020).

Archaeological evidence undoubtedly indicates that the earliest urbanisation in South Asia, known as the Harappan Civilisation, emerged in the upper Saraswati basin (4000 BC-1300 BC). An ideal socioeconomic system was established by the region's early farming communities, which were primarily centred on expert technology, trade systems, artisan activities, agricultural methods, and rituals (Narender Parmar, 2014, p. 865). In this period, much archaeological evidence of disease and treatment can be seen in the Indus and its contemporary civilisations. A lady's skeleton (figure 3) was discovered buried with the first documented prosthetic eye in Shahr-I Sokhta, Iran. Engraved with a centre iris from which lines sprang like the sun's rays, it was most likely composed of bitumen paste that had been lightly coated in gold (MOGHADASI, 2014).



Figure 3: Skeleton has a prosthetic eyeball in Shahr-I Sokhta (Farrok, 2009)

Much archaeological evidence about physical disorders and their treatment in the Indus civilisation has been presented. In this, the proof of skull operation (trephination) obtained from archaeological sites such as Kalibangan and Lothal of this civilisation is worth becoming a topic of discussion (Sankhyan & Schug, 2011). Many facts are also found in Ayurveda-related texts regarding the treatment of brain-related disorders by skull piercing (Pai & Menon, 2022).

The term "historic period" indicates times in human history that improved from the invention of writing. Because written records often offer greater sociopolitical insight into the establishing nations, they enable classification based on the cultures and empires in power. In this period, which is considered to be after 600 BC, many texts were written, with the help of which historical re-evaluation of Indian political, economic, social, cultural and societal life and various aspects became easy. From Vedic literature to *Vagbhata* (600 AD) of the *Gupta* period, a long line of evidence is visible as literary sources for the historical study of disease and medicine in India. This era of Ayurvedic history is referred to as the *Samhita Kaal* (Sharma, 1975, pp. 52-53, 75) because of the writing of primary and original literature on a variety of topics, including Ayurveda, of course. Apart from this, there is a lot of archaeological evidence on this subject.

Taxila is one of the most important archaeological sites on the subcontinent that deals with ancient Indian surgical equipment. The Pakistani capital, Islamabad, lies around 20 km to the north of it. At this ancient place of medical learning, the discovery of surgical tools further supports its place in surgical practice. As Marshall expressed it, "metallurgical expertise had grown to an extremely advanced level" in their production, as almost pure copper was used to make the tools. The *Taxila* Museum's surgical tools (figure 4)

exhibit features 12 items from Marshall's catalogue. This evidence related to surgery is considered (100 AD to 126 AD) to be contemporary of *Kanishka* (Naqvi, 2003).

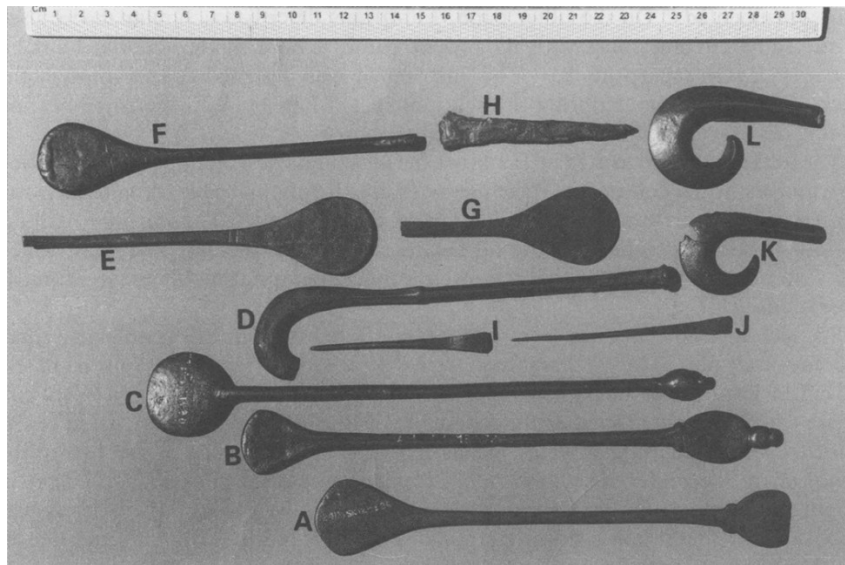


Figure 4: Surgical Instruments of Taxila

Chinese traveller Fa-hien (CE 405–411), who travelled to India during *Chandragupta's* reign, gives us information on *Pataliputra's* charity clinics. Fa-hien claims that the country's nobility and householders established hospitals in the city where the poor, the disabled, the sick, and those in need from all nations might visit. Another Chinese traveller who lived during the reign of Emperor *Harsha*, Hiuen Tsang (CE 629–645), similarly describes the hospitals of that era. He claimed that there were "hospices" (*punya-salas*) on every town and village roadway in India and that some epigraphical documents demonstrate the presence of dispensaries in the Deccan during the *Pallava* era, which lasted from CE 574 to 879 (Agrawal & Goyal, 2011). With these references to evidence, we can easily evaluate the medical progress of ancient India.

Conclusion

From the perspective of cultural history, India has been an immensely rich country since the very beginning. Without awareness of health, the conception of an advanced and developed civilisation is not possible. The presence of healthcare facilities in all dimensions of social needs is essential for a healthy society. This research paper reflects that India has been well-developed in various fields of medicine since the Stone Age. Among these, anatomical evidence—found in the form of X-ray-type paintings across India—holds particular importance from both archaeological and Ayurvedic historical perspectives. In addition, the evidence of dentistry from Mehrgarh and the prosthetic eye from Shahr-i-Sokhta demonstrates the medical measures adopted for contemporary diseases and related cultures. The descriptions of surgical procedures



and appropriate surgical instruments by ancient scholars such as *Sushruta* and *Vagbhata* are corroborated by the archaeological findings at *Taxila*. This research paper provides a bird's-eye view of the development of the Indian medical tradition. Undoubtedly, to synthesise the vast corpus of Ayurvedic literature into a single paper is a challenging task. At present, the field of historical studies on Ayurveda holds immense possibilities.

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