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# Early Medieval Representation of Human Anatomy: A Case Study of Chamunda Stone Image from Dharamsala, Odisha

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**Abstract:** *The understanding of the human anatomy was a subject of an investigation of various civilizations for the purpose of varied reasons. However, in Indian tradition, it is often seen and discussed taking into consideration its religious background, and to some extent, it was a subject of magico-medicinal studies. Whereas, this traditional understanding of human anatomy is seen in various types of visuals since Early Historic period. In which most fascinating portrayal of human anatomy is noticed on stone sculptures. Especially, the Early Medieval depictions of some Brahmanical deities began to show with its anatomical details, in which the representation of goddess Chamunda took an important place where her skeletal features developed had become an identical norm. While making an image of Chamunda with all its anatomical details the sculptor requires the basic knowledge of the human anatomy. This knowledge may have been gained by these sculptors through the observation of actual human anatomy to achieve the certain perfection. This artistic perfection can be seen resulted in some of the sculptures found different parts of the country. However, such types of several stone images of Chamunda with its micro anatomical details are often noticed in the state of Odisha, which once was the primecenter of Shaktism. This paper discusses the results of a case study carried upon the stone image of Chamunda found at Dharamsala in order to understand the nature and accuracy of traditional knowledge of human anatomy.*

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**Keywords:** Medieval, Human Anatomy, Chamunda, Dharamsala, Iconography, Sculpture, Odisha

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## Introduction

The investigation of the traditional knowledge system, through its historical perspective, is an important aspect of the history of science and technology (Nanda 2017). It has developed as an important discipline in the 20<sup>th</sup> century. In this discipline, the subjects of investigation are diverse and varied. In which mainly includes the history of traditional medicine (Wujastyk 2009), history of numerals and mathematics (Plofker et al. 2017), astrology (Mak 2013), traditional alchemy (White 1996) etc. In

these studies, broadly two paradigms can be observed regulating the progress of this discipline. In which first is an understanding of the religious dimension for looking macro aspects of particular sect and its practices (Dehejia 1986; Padoux 1990; Wilson 1995; White 1996), second to understand the development of scientific ideas through the investigation of these traditional knowledge (Zysk 1986; Bhattacharya 2008; Wujastyk 2009; Savage-Smith 1997). These studies are significant since it discusses the cross-cultural relation and migration of ideas through which this knowledge system was evolved and spread (Nanda 2017).

The investigation of medicinal practices in ancient India some scholars has discussed the traditional understanding of human anatomy (Zysk 1986; Wujastyk 2009; Savage-Smith 1997). The knowledge of human anatomy is an essential requirement for a medical practitioner in order to understand the function of the body, causes of diseases, the cause of death and also for medicinal experiments. As mentioned above all these previous studies focusing on the history of medicine in general and human anatomy particular. These studies are mainly based on the textual sources. There is another sphere of information which can be a crucial source to look in a different way for the same. As discussed by Wujastyk (2009) while discussing the development of the Ayurveda. In this discussion, he took the review of late medieval texts and commentaries on Ayurveda. The main objective of this review was to examine the Indian understanding of human anatomy. Since some of these texts contain the illustrations and paintings of the human anatomy to serve as a reference to the student of Ayurveda. At last, he remarked that in Indian tradition due to socio-religious factors the knowledge and understanding of human anatomy was limited and remained stagnant after Post-Shushruta period (Wujastyk 2009). However, apart from this, there is another strong tradition of visual representation that is a stone sculpture which is completely missed or not taken in consideration seriously in previous studies. The stone sculptures which depicts the human anatomy with its micro details gives a different impression of the traditional understanding of human anatomy. These stone sculptures have appreciated by the art historians for its artistic excellence and perfection. However, these stone sculptures can be useful for re-examining the traditional knowledge of human anatomy in the past.

The depiction of human anatomy in Indian stone sculptural art was first seen during the Early Historic period. In which the image of Buddha in its emaciated body begun to represent. This type of images was frequently observed in Gandhara school of art (Huntington 1985: 142). Such images of Buddha were made for the certain purposes one of the purposes was to show the extremity of physical penance and its savior influence over the body. In Buddhist iconographic tradition, this was the only image of Buddha which is seen in skeletal form. Such imagery of Buddha is seen in confined period and region (Huntington 1985).

However, in another hand within Brahmanical iconographical tradition some of the divine characters are always shown or described with skeletal features. As discussed

and prescribed in manuals of iconography (Rao 1914). In these deities includes Chamunda, Bhringi an ardent devotee of Shiva, the deity Kal, a male counterpart of Kali and male/female attendance of Bhairavi and Bhairava these attendant deities categorized as Bhuta and Pishaccha. Among these divinities, Chamunda rose as powerful goddess due to her important position into the cult of goddesses. Subsequently, in tantric cults of Shaktism goddess Chamunda developed as chief deity of worship (Hazra 1963; Kinsley 1975; Mukhopadhyay 1984; Misra 1989; Daniélou 1991).

The goddess Chamunda is an integral goddess in a group of Saptamatraka placed her on the seventh number in several texts (Rao 1914; Banerjea 1956; Joshi 1979; Mukhopadhyay 1984; Misra 1989; Pannikar 1997). The iconographic development of this matraka imagery is discussed by several scholars (Banerjea 1956; Kinsley 1975; Joshi 1979; Mukhopadhyay 1984; Misra 1989; Pannikar 1997; Meister 1987). However, its individual iconic representations and presence in the group of matrkas are observed being prominent onwards 4<sup>th</sup> century CE. The several findings of the images of Saptamatraka after 4<sup>th</sup> century CE in throughout Indian subcontinent indicates that the worship of goddesses was prominent during the Early Medieval period (Kinsley 1975; Meister 1978; Pannikar 1997). During this period these goddesses are seen portrayed in two types. In a panel which varies in numbers such as seven, eight or nine and individual depictions. Its myths and legends, the number of goddesses, its origin and followed by their inclusion and exclusion are discussed in plenty of texts. This corpus of texts also conveys the religious and sectarian importance (Rao 1914; Kramrisch 1974; Kinsley 1975; Dehejia 1986; White 1996). As mentioned above the iconographic depiction of Chamunda also seen in two types. In an early phase of her iconographic depiction, she is shown in ferocious form but with usual feminine features. In several instances, same has continued in the latter period also (Kinsley 1975; Meister 1978; Joshi 1979; Misra 1989: 102; Pannikar 1997). However, this scenario gradually changed significantly and along with this, the goddess began to be represented in skeletal form (Kinsley 1975; Meister 1978; Joshi 1979; Misra 1989; Pannikar 1997). The several names of the goddess also make some confusion regarding the exact nature of the deity. As she is referred as Chamunda, Chandi, Kali and Kalika. However, the textual tradition is clear on one aspect that the goddess is a manifestation of goddess Durga (Agrawala 1963; Kinsley 1975; Joshi 1979). Whereas, its mythological background strongly connects her with the Shiva which is vividly described in an episode of *andhakasuravadha* in Agni Purana (Agrawala 1963; Hazra 1963; Kinsley 1975; Misra 1989).

The present paper focuses on the Chamunda sculpture found at Dharamsala, District Jajpur in Odisha (Fig. 1a, Fig. 1b). This image of Chamunda is now displayed in Archaeology gallery in Odisha State Museum, Bhubaneswar. The close observation of its stylistic nature it suggests that it can be placed around 9<sup>th</sup> century CE. However, similar types of Chamunda images are earlier reported in Odisha. These images are discussed by scholars taking into consideration its iconographical aspects (Misra 1989:

109-110; Pannikar 1997: 146-147). However, this paper deals with the iconographical portrayal of goddess Chamunda with reference to its skeletal features. The images of Chamunda are commonly represented in emaciated form. This iconic nature of the deity is considered as her identical feature. Such form of the deity was immensely popular during the Early Medieval period in throughout the country. Here the focus is on understanding the traditional knowledge of human skeletal anatomy with its present understanding of human skeletal anatomy.

## The Iconography of Chamunda

The goddess was instrumental to kill the demons Chanda and Munda hence she named as Chamunda. The deity is known for her ferocious nature and mentioned as a consort of Bhairava who also bears ferocious character. The deity is also considered as a goddess of death and time (Kinsley 1975). There are multiple aspects which are discussed in the texts due to this the fearful nature of the deity developed as its identical element. This ferocious element seen represented through the skeletal body, with a terrifying face, sunken eyes, gaping mouth, pendulous breasts, long nails and a sunken belly surrounded by flesh and bloodthirsty wild animals. The mount of the deity is a *preta* (corpse). Some opinions vary which claims that it is not a *preta* rather it is himself Shiva who laid beneath her in order to get her to calm down from anger after killing a demon (Soundarajan 2003: 267-71).

There are eight principle forms of the goddess Chamunda. In these most commonly observed iconographic features of Chamunda can be extracted through the texts of the iconography. That is the goddess should wear a garland of skulls (*mundamala*), with *jatamukuta* formed of matted hair, tied with a snake or skull ornament. The goddess holds a bowl in her hand filled with blood or wine. The deity should be shown surrounded by a skeleton, flesh-eating jackals, corpse, snake, eagle and scorpion. The mount of the deity prescribed varies according to its regional affiliation and textual tradition (Mukhopadhyay 1984; Misra 1989; Pannikar 1997). Some of the texts prescribed owl as a mount of the goddess. Whereas, most commonly mentioned and noticed mount is a corpse. The goddess is called *Yogeshwari* when the deity is depicted with three eyes and four hands (Rao 1914; Misra 1989). The attributes of the goddess are prescribed as follows, the trident or dagger, *kapala*, *damaru*, and *narmunda*. Sometimes a scorpion can be seen depicted on her navel often noticed when the deity is shown in a dancing posture. The ornaments of the deity are mentioned to be made of bones, serpent, skulls and other symbols of disease and death. The deity should depict wearing a *yajnapovita*, made of skulls (Rao 1914; Banerjea 1956; Joshi 1979; Pannikar 1997).

## Description of Image

This image of Chamunda is *ubhayanvartica* carved equally from front and back side such type of images suggests that it would be made for sanctum sanctorum. Since the image is displayed in the museum it was difficult to document the back portion of the image. Hence the author tried to make a video putting the camera on its back for

documentation. The image measures roughly around 2'6" × 1'6". Deity is seated in *lalitasana* has four hands (Figures 1a and 1b). The lower right and upper hand are mutilated. Whereas, the remaining portion of upper right hand which is seen at the chest of deity holds a *Kapal*. The upper left hand also is completely broken. However, the lower left hand holds severed head (*narmunda*).



Figure 1a: Goddess Chamunda



Figure 1b: Illustration of Chamunda

The goddess is shown seated on obsessed boy (Corpse or *Preta*). The corpse is placed on a pedestal. The deity has a skeletal body, veins can be seen clearly. Its face is ferocious and wrathful; eyes are popping out with open mouth and frown on face. This may be influenced by the concept of *Yogeshvari* as third eye shown prominently over the forehead. The hair stands are erected (*urdhvakesha*) which look like fire flames (*joalakesha*) (Rao 1989). The hairs are tied firmly with a snake and skull. On the right side of headgear a small hand in *abhayamudra* is depicted; same feature can be seen on left but it is an eroded condition. The goddess is wearing a skull garland, *mundamala* consist of 44 skulls and *sarpakundalas* in ears. A snake encircling around the neck. The deity is shown wearing a *bajubandh* made by the design of snake, Same ornaments are replicated at wrist and ankle. It is an artistic excellence where snake is shown holding

its own tail in mouth which has formed a beautiful circle. The deity is shown wearing ornate *mekhala*. The *parikara* of the image is ornate depicting the elephant skin in low relief. The representations of pair of owls carrying garland is shown on portion of elephant's ear on a left side. The depiction of peacock, bell and conch shell can be observed on a right side. The depiction of devotee is seen beside the right foot of the deity. The devotee is shown sitting in *vajrasana* has a prominent headgear with circular *karnakundalas*. It is holding a sword in its right arm shown wearing an ornate *bajubandha* and *keyur*. The devotee is in *namaskarmudra*, head is shown slightly raised upwards watching a divine appearance of the goddess. The five jackals are shown fetching flesh from corpse which is beneath of the deity. The small female attendant (11.5 cm) of the goddess is shown on a left side of the pedestal below the left foot of the corpse. This female attendance replicates the main goddess shown in skeletal form holding dagger and *kapala* in right and left hand respectively.



Figure 2: Details of Face



Figure 3: The Right Rib Cage

### Examination of Skeletal Anatomy of the Sculpture

The branch of morphology that deals with the structure of organisms are known as anatomy (Webster dictionary). The physiognomic features of Chamunda in this sculpture looks like a skeleton and these skeletal features are easily identifiable. The wrinkles on the face and the superficial veins popping-out denotes the fierce aspect of the Chamunda. The eye orbits are symmetrical in nature. The nasal cavity (Nose)

cannot be seen due to weathering of the sculpture. The cheekbone (zygomatic bone) is prominent. Also, the zygomatic arch groove can be clearly seen. The mandible is also projecting and presented with a sharp gonial angle (Figure 2). The supraorbital ridge is visible but not much protuberance. The occipital region is carved flat.



Figure 4: The Carpal Bones of Posterior Left Hand



Figure 5: Muscles and Veins Depicted in Right Lower Extremity



Figure 6: Bones with its Respective Labels

There are 24 pre-sacral vertebrae present in human body. In this sculpture, there are around 17-18 bodies of vertebrae which can be visible at back in eroded condition. The last three cervical vertebrae (from neck region) can be spotted on the back of the neck. Total eight vertebrae articulate with ribs at the back. Hence there are eight thoracic vertebrae. Remaining six are in the lower back and they are badly eroded. Numbers of vertebrae carved is not clear, only 17-18 bodies were noticeable. Both clavicles are present and placed in correct position. In this image, there are total 28 ribs represented on the sculpture instead of 24. Whereas, only 16 ribs are articulating with eight vertebrae, eight on each side right and left. The distribution of ribs is uneven. There are 15 ribs on right side and 13 on left. However, in the human body, there are 12 ribs on each side. In the human body, there are 24 ribs articulating to 12 thoracic vertebrae on both sides of vertebrae body respectively (Figure3). Sternum and manubrium are absent. The image has four hands. They have been given following denomination for identification: R1 and L1 to hands on the front on both sides; R2 and L2 to hands on the posterior side. The humeral head is visible on R1. Radius and Ulna have not been presented distinctly. The dorsum or back side is with flesh, but phalanges can be observed. Olecranon is visible on both elbows (R2 and L2). Most probably trapezium bone is visible on the L1 wrist. The carpal bones cannot be seen. Both R1 & L1 hands have five metacarpals. The nails are visible at fingertips of both hand and feet. In R1 there are total eleven phalanges can be identifiable. In which three phalanges are broken from the distal end. All five fingers can be spotted with no trouble. In case of L2, only seven phalanges are unspoiled out of which only five are complete and two are half was broken (Figure4). The lower limb has been illustrated like a normal human thigh and leg. Veins have been depicted on hands, legs, and torso (Figure5). Only talus bone is visible out of all tarsal bones. The right foot of the deity has five metatarsals and ten phalanges. The toe of this foot is damaged. The ten phalanges of this foot are in good preservation. Whereas, the left foot of the deity is broken from metatarsals (Figure6).

## **Discussion**

The detailed study of this image reveals that the sculptor/sculptors of this image were quite familiar with the features of human anatomy. As observed through image they were quite precise while depicting the anatomical features in a sculpture of Chamunda. Especially, in a depiction of phalanges, it has been depicted fairly accurate on both hands and feet. In other important features, the vertebrae are depicted with elevated portions on the back of the figure. The sculptor didn't seem to have accurate knowledge about the rib cage. These features with its certain accuracy show the perfection of the skill of sculpting by the sculptor. This perfection of carving the human skeletal anatomy with its major physiognomic features seems to be developed by the strong background of individual visual practical and through the observations of existing human anatomy of that period. This practical understanding of human skeletal anatomy may have come to know to the class of the sculptors through the contemporary practice of tantric religion in general and the Shaktism in particular. This



particular aspect of the tantrism in which the human skeletal is required for ritual purpose needs to further investigate to understand such type sculptural representations. The present image which is one of the exceptional examples of the contemporary craftsmanship also needs to be further studied in comparison to the other images of Chamunda of that period in same and another region.

This image bears some other micro details of the human anatomy such as muscles and veins. These features will be dealt separately in a subsequent paper by the authors. Other than this, along with micro details of anatomical features of Chamunda, there are some important depictions. These depictions include elephant, peacock, fox, a pair of an owl, snake, male devotee and dancing female attendance with emaciate body also need to further investigate to understand its actual functional nature.

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