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Review Article

The Healing and Snakes: A Historical Review of Symbolism and Science in the Medical Emblem

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ABSTRACT

The snake has long been a potent symbol in medicine, embodying the paradox of danger and healing. This article traces the evolution of serpent symbolism from ancient civilizations, such as Egyptian, Mesopotamian, and Greek cultures, to modern medical science. The Rod of Asclepius, with its single coiled serpent, encapsulates the snake's dual role as a source of venomous threat and a powerful healing agent. Ancient traditions used snakes both ritually and medicinally, while contemporary medicine harnesses snake venom for pharmaceutical breakthroughs, including treatments for hypertension and cancer. Despite advances in scientific understanding, traditional snake-related healing practices persist worldwide, highlighting cultural continuity. However, the increasing demand for snake-derived products poses sustainability challenges. The enduring presence of the snake in medical emblems and therapies underscores the complex interplay between destruction and restoration, reflecting humanity's ongoing relationship with nature's most enigmatic creatures. This exploration bridges mythology, culture, and science in understanding the snake's role in healing.

Key words: Snake symbolism, medical emblem, snake venom therapy

INTRODUCTION

Throughout history, humans have been fascinated by snakes because these animals represent both deadly threats and lifesaving potential. The Rod of Asclepius stands as the most well-known medical symbol, which represents the snake's healing power. The snake represents a fundamental contradiction because it delivers fatal venom, yet it now represents medical treatment and life-saving practices. The connection between snakes and healing has existed for thousands of years, as it evolved from ancient religious symbolism to modern scientific discoveries. Medical practices and emblems continue to feature serpents as a lasting symbol, which demonstrates the eternal relationship between destructive and restorative forces and between existence and demise. [1]

THE SERPENT AS A MEDICAL EMBLEM: THE ROD OF ASCLEPIUS

The Rod of Asclepius—a staff with a single serpent coiled around it—is one of the most recognizable symbols in medicine. The emblem connects ancient medical practices to modern times by representing the snake's dual nature as both a source of danger and a therapeutic agent. The Rod of Asclepius originated from ancient Greek mythology, where the healing god Asclepius received his power from serpents. The temples of Asclepius contained sacred snakes, which patients used for healing by resting on temple floors as the serpents moved across their bodies. The snake's deadly venom, which could kill through a bite, was believed to possess healing properties. The Rod of Asclepius exists because of this symbolic connection, which unites life and death and healing and harm.

The snake's skin-shedding process became a symbol of rebirth, which made it an appropriate emblem for health restoration. Through time, the connection between snakes and healing became stronger until the medical community adopted the snake as their powerful healing symbol (**Figures 1 and 2**). [2]

THE SNAKE IN ANCIENT HEALING TRADITIONS

The Rod of Asclepius represents the most popular medical symbol of serpents, yet snake healing practices existed before ancient Greek times. Many cultures throughout history



Figure 1: Statue of Asclepius, the Greek god of medicine, holding the Rod of Asclepius.



Figure 2: An advertisement for "Doc Mitchell's Snake Oil" from the 19th century.

have viewed snakes as dangerous protective creatures, including ancient Egyptian and Mesopotamian, and biblical traditions. The ancient Egyptians worshipped snakes because they embodied dual characteristics. The ouroboros, which depicted a snake consuming its own tail, served as a symbol of eternal life cycles between birth and death and rebirth while

showing how the venomous snake could simultaneously heal. The Ebers Papyrus, which is an ancient Egyptian medical text, shows how snake-derived substances were used in treatments, thus demonstrating the serpent's dual role in supernatural and practical medical practices. The ancient Sumerians, who preceded Assyria and Babylonia, used serpents in a coiled

position as religious and medical symbols. A libation vase from 2150 BCE shows two serpents wrapped around a staff to represent the god Ningishzida's power over life and death, which marks an early depiction of serpent-based healing. Through the biblical story of Moses creating a bronze serpent to heal venomous bites, the snake gained its association with healing. The bronze serpent, which presented itself as a harmful creature, became a symbol of salvation before the development of snake-related healing symbolism in medical and religious practices. [3]

THE SNAKE'S HEALING LEGACY ACROSS CULTURES

The healing power of serpents persisted across different cultures after ancient Egypt and Mesopotamia. The snake image persisted as a symbol of both healing and destructive power throughout various healing traditions. The people of Kerala, India, practice Naga Aradhana as a form of snake worship, which holds sacred spiritual and medical value. The Aadimoolam Vetticode Sree Nagarajaswami Temple and other serpent deity temples perform rituals to eliminate Naga Dosha snake curses. The rituals demonstrate how people throughout time have maintained their belief in snakes' sacred healing abilities, which they have transmitted from one generation to the next. The people of Kurdistan maintain the serpent symbol as a powerful force that represents both positive fortune and threatening danger. The local population views snakes as healing creatures, yet they fear their dangerous potential, which matches the dual symbolism of the ancient Egyptian serpent. The practice of serpent handling among Pentecostal communities in the Appalachian region of the United States demonstrates how people continue to believe in snake spiritual power while their beliefs shift away from medical applications. [4,5]

THE SERPENT IN MODERN MEDICAL SCIENCE: FROM VENOM TO REMEDY

The symbolic application of snakes in medicine established the foundation for contemporary scientific research involving serpent-derived substances. The snake serves as both a healing symbol and an active contributor to current medical breakthroughs. The discovery of antivenom in 1894 through modified snake venom antibody production revolutionized venomous bite treatment by establishing a direct medical application of serpent venom. Snake venom remains essential for contemporary pharmaceutical research and development. The Bothrops jararaca snake venom served as the source material to develop captopril, which became the initial angiotensin-converting enzyme inhibitor for treating hypertension and heart failure. The discovery proved that venom compounds from snakes could treat cardiovascular diseases, thus showing how healing concepts from ancient times evolved into contemporary medical treatments. Research today extends the therapeutic applications of snake venom because scientists have discovered that snake toxins show potential as cancer treatments. Research shows that phospholipase A2, L-amino acid oxidase, and disintegrin demonstrate anti-tumor effects through mechanisms that trigger cell death and restrict tumor expansion. The research connects historical snake symbolism to contemporary medical breakthroughs. [5,6]

THE CONTINUING ROLE OF SNAKES IN TRADITIONAL AND MODERN MEDICINE

Modern scientific understanding of snake venom has evolved through time, yet traditional healing practices continue to utilize serpents in different ways. Ayurvedic practitioners continue to treat snake bites and their resulting chronic non-healing ulcers through traditional medical approaches. A recent case report showed that traditional Ayurvedic treatments successfully treated viper bite ulcers, which proves the ongoing value of traditional healing systems together with contemporary medical practices. Traditional snake wines remain popular in East Asian medicine for treating rheumatism and joint pain as part of regional medical traditions. The traditional uses of serpents in medicine demonstrate the enduring cultural and medicinal connections between humans and snakes despite restricted scientific evidence supporting these practices. The increasing demand for snake-derived products requires sustainable harvesting practices to protect snake populations from extinction. The over-exploitation of certain species has reached critical levels, which makes research into synthetic alternatives and sustainable methods more essential than ever. [7]

CONCLUSIONS

The Snake as a Symbol of Medicine's Paradox

The Rod of Asclepius symbolizes the snake's dual medical role because it demonstrates both its healing properties and its dangerous nature. Throughout history, the serpent has maintained its position as a healing companion in medical practices, starting from ancient Egyptian rituals and extending to contemporary pharmaceutical discoveries. The medical exploration of snake venom reveals how poison and remedy exist in a narrow boundary between danger and salvation. The medical emblem features snakes because they represent the intricate bond between humans and nature. The venom, which used to signify death, now serves as a symbol of medical salvation. The snake's symbolism has demonstrated remarkable flexibility throughout history as it transitioned from ancient rituals to contemporary scientific applications in medicine. The snake's position in healing practices from ancient times to the present day reveals an ongoing narrative that connects different time periods and civilizations to demonstrate the thin distinction between toxic substances and therapeutic agents.

AUTHORS' CONTRIBUTION

All authors have significantly contributed to the work, whether by conducting literature searches, drafting, revising, or critically reviewing the article. They have given their final approval of the version to be published, have agreed with the journal to which the article has been submitted, and agree to be accountable for all aspects of the work.

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