JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

# THE INTERSECTION OF MYTHOLOGY AND BIOTECHNOLOGY: ANCIENT NARRATIVES OF REPRODUCTION

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***Abstract***

This study delves into the fascinating realm of ancient Indian mythology, where divine interventions and reproductive miracles abound. By examining the mythological narratives of test tube babies in ancient India, this study uses interdisciplinary approach to explore the intersection of mythology and biotechnology, shedding light on the ingenuity and broad-mindedness of ancient Indian society. Through a qualitative analysis of ancient Indian texts, such as the Mahabharata and other ancient texts, this research identifies and interprets the mythological accounts of assisted reproduction. By juxtaposing these mythological narratives with modern biotechnological advancements in assisted reproductive technology (ART), this study highlights the surprising parallels and convergences between ancient Indian mythology and contemporary biotechnology. This research contributes to a nuanced understanding of ancient Indian reproductive practices, challenging the dominant narrative that assisted reproduction is a solely modern phenomenon. Furthermore, this study demonstrates the value of interdisciplinary research, combining insights from mythology, history, philosophy and biotechnology to illuminate the complexities of human reproduction and the human experience. Ultimately, this research paper invites readers to reconsider the boundaries between mythology and science and to appreciate the ingenuity and creativity of ancient Indian society in its exploration of the human reproductive experience.

***Keywords***: Mythology, biotechnology, test-tube babies, reproductive technology, reproduction narratives

***Introduction***

The concept of test tube babies, or babies conceived through assisted reproductive technologies, is often perceived as a modern phenomenon. However, ancient Indian mythology and scriptures reveal a fascinating narrative of reproductive interventions, where divine beings and sages employed unconventional methods to conceive and give birth to extraordinary children. This phenomenon is particularly evident in the stories of ancient India's "test tube babies," who were born through various forms of assisted reproduction, including parthenogenesis, artificial incubation and divine intervention. This research paper delves into the fascinating world of ancient India's test tube babies, exploring the mythological narratives, cultural significance and historical context surrounding these extraordinary births. By examining the stories of Dronacharya, Kauravas, and other mythological figures born through assisted reproduction, this paper aims to challenge the dominant narrative that assisted reproductive technologies are a solely modern innovation. It seeks to demonstrate that ancient Indian society was familiar with, and even celebrated, various forms of reproductive intervention. Through a critical analysis of ancient Indian texts, including the Mahabharata, the Ramayana and the Puranas, this research paper will explore the cultural, social, and philosophical implications of ancient India's test tube babies. By doing so, it hopes to contribute to a more nuanced understanding of the history of reproductive technologies and the complex relationships between mythology, culture, and science.

***Mythological Birth Stories***

***The birth story of Dronacharya***

Dronacharya, the revered teacher of the Pandavas and Kauravas in the Indian epic Mahabharata, is steeped in divine and mystical origins. Dronacharya was born to the sage Bharadwaja, one of the seven great sages (Saptarishis), and was conceived under extraordinary circumstances. One day, Sage Bharadwaja went to the Ganga River for his evening ablutions. There, he saw an apsara (celestial nymph) named Ghritachi bathing. The sight of her filled him with desire, but being a sage committed to asceticism, he did not act on it physically. However, his intense emotions caused him to involuntarily release his vital fluid, which he carefully stored in a drona (a pot). Through divine intervention, this fluid developed into a child within the pot, giving rise to Drona (meaning "born of a pot"). Thus, Dronacharya is often referred to as a Kumbha Sambhava (pot-born). Drona grew up in Bharadwaja's hermitage, where he was trained in Vedic knowledge, warfare, and the use of celestial weapons. He became a master archer and an unparalleled teacher of military arts.

The birth of Dronacharya, who was born from a pot (drona) through the vital fluid of Sage Bharadwaja, can be connected to modern assisted reproductive technologies (ART), particularly in vitro fertilization (IVF) and artificial womb technology. In Vitro Fertilization (IVF), the fusion of sperm and egg occurs outside the human body in a controlled laboratory environment. Similarly, Dronacharya's conception occurred outside a human womb, within a pot. This connection highlights the concept of fertilization and growth in an external medium.

***Birth of Makardhwaja***

After Hanuman burned down Lanka with his fiery tail during his mission to rescue Sita, he leapt into the ocean to cool off. As he did so, a drop of his perspiration or divine energy fell into the water. By divine will, this drop was swallowed by a mighty fish (sometimes described as a crocodile or a sea creature, depending on the retelling). This fish later gave birth to Makardhwaja, who emerged as a part-human, part-divine being with extraordinary strength and valor, inheriting his father’s qualities. In nature, parthenogenesis is a phenomenon where an organism reproduces without fertilization, typically seen in some plants, insects, and reptiles. Makardhwaja's birth, involving a single "source" (Hanuman's divine energy), can be compared to this process.

***Birth of Raktabeej***

Rakthabeej was a powerful who had a unique boon from Lord Brahma. The boon made him virtually invincible: every drop of his blood that fell to the ground would give rise to a new demon as strong and fierce as him. This ability made him a formidable opponent, as his blood multiplied his army with each wound inflicted upon him. Rakthabeej's ability to create new entities from his blood mirrors the scientific process of cloning, where genetic material from a single organism is used to produce identical copies. In Rakthabeej's case, every drop of blood acted like a "cell" containing the blueprint to create a new being, much like how a somatic cell in cloning carries the genetic information to replicate an organism.

***Birth of Lord Ganesha***

The story of Lord Ganesha's birth begins with Goddess Parvati creating him from turmeric paste. One day, as she was preparing to take a bath, Parvati realized she needed someone to guard her privacy. Using the turmeric paste (used for her bath) mixed with divine energy, she molded the figure of a young boy. She then infused life into this creation with her divine powers, and the boy came to life. She named him Vinayaka and lovingly regarded him as her son. Thus, Ganesha was born from turmeric paste, a substance Parvati applied to her body. Turmeric paste in the story represents a material originating from her skin. Cloning involves taking cells from an organism (such as skin cells) and using their genetic material to create a new organism. In this process, the DNA from the cells is placed in an environment where it can grow into a new being.

***Birth of Kauravas***

The Mahabharata lists a 100 Kauravas, and one daughter, who were born to Gandhari and Dhristrashtra. The epic describes Gandhari as having a prolonged gestation, after which she gave birth to a lump of immovable flesh. Prolonged gestation is documented in modern medical records, and can be due to a variety of causes. The record for the longest pregnancy is 375 days. It is plausible, however, that Gandhari’s “pregnancy” was a case of pseudocyesis.

Gandhari's story did not end with a "still birth." As the legend goes, the "fetus" was divided into a hundred pieces, which were put in jars to which ghee (clarifed butter) was added, and incubated. Finally, 101 children were born, one by one. This narrative is strongly reminiscent of in vitro fertilization (IVF), with the multiple pregnancies that commonly occur with it. In Gandhari's case, however, the description mirrors an extra-uterine gestation, a scientific feat that future researchers may be able to achieve.

***Birth of Balarama***

Balarama, the elder brother of Lord Krishna, was born through divine intervention to protect him from the evil king Kamsa. Kamsa, fearing a prophecy that Devaki's eighth child would kill him, imprisoned her and Vasudeva, killing their first six children. When Devaki conceived her seventh child, the unborn Balarama, Lord Vishnu devised a plan to save him. Vishnu instructed Yogamaya, the goddess of illusion, to transfer the embryo from Devaki's womb to that of Rohini, another wife of Vasudeva, who was living safely in Gokul. This miraculous transference led to Balarama being born to Rohini, while Kamsa believed Devaki had miscarried. Balarama's birth, which involved the divine transfer of his embryo from Devaki's womb to Rohini's, can be metaphorically connected to modern medical technologies like embryo transfer and surrogacy. In Balarama's story, Yogamaya facilitated the transfer of the embryo from Devaki to Rohini, ensuring its survival and protection. Similarly, in modern medicine, in-vitro fertilization (IVF) allows an embryo to be created and then transferred to another womb (a surrogate or the biological mother), ensuring its safe development. Rohini acted as a surrogate mother for Balarama, carrying and giving birth to him while ensuring his safety from Kamsa's wrath. Modern gestational surrogacy mirrors this, where a surrogate mother carries the embryo of the intended parents, protecting the child until birth.

***Conclusion***

This research paper has demonstrated that the concept of test-tube babies was not entirely foreign to ancient Indian society. Through an examination of ancient texts, myths and legends, we have seen that the idea of assisted reproduction was not only present but also accepted and explored in ancient India. This challenges our common perception of ancient societies as conservative and narrow-minded, highlighting instead their broad-mindedness and acceptance of innovative ideas. Though the miraculous births cannot be directly linked with the modern-day medical technologies, this study proves that reproductive techniques are not alien to ancient India.

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