

**INSPECTION OF SCIENTIFIC MIRACLES OF THE HOLY QURAN ABOUT BONE FORMATION IN FETUS**

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**ABSTRACT**

One of the most important issues, in the case of interdisciplinary interpretation of the Holy Quran, is scientific miracles of Quran in all aspects of science. One of them is in medical science. In medical science, especially in embryology, different stages of human creation are discussed. There is no doubt that the discussions of Quran about different stages of human creation confirms with recent sciences; in some cases, the teachings of the Holy Quran are considered as good examples of scientific miracles of the Holy Quran. According to Quran, Hadiths and medical science there are different stages for human creation, as follows: soil, semen, sperm, coagulum, chewed meat, appearance formation, bone formation, meat creation, soul creation and birth. This article tries to inspect the scientific miracles of Quran about the stages of bone formation in human creation process.

**KEYWORDS:** The Scientific Miracles of The Holy Quran, Different Stages of Human Creation, Medical Science, Bone Formation.

**INTRODUCTION**

The Quran researchers and experts of various sciences have recently, recent century, paid attention to scientific miracles of the Holy Quran. One of these miracles is explaining different stages of human creation that has also been explained in interpretive hadiths; this information about human creation confirms with medical science achievements. This prophet Mohamad's eternal miracle, peace be upon him, that is called the Holy Quran was revealed at the time, when medical science was very young and medical scientists didn't have enough information about internal body systems and their secrets. Iran and Greece's medicine was flag bearer in that time, but they also didn't have very much progress in dissection of human body. Autopsy and dissection of internal members of human's body have become very important for physicians, universities and big scientific centers of the world in recent years. All Muslims believe that the Holy Quran is the prophet Mohamad's eternal miracle that has been sent to him by the God. The scientific and medical miracle of the Holy Quran is in the field of embryology. Some of authors have classified the verses of Quran according to their relation with different sciences. Some others like Yusef Marveh(1), believe that there are 675 scientific verses in Quran while some authors like Mohamad Jamil aljebal and Meghdad Marei aljavari (2) believe that there are 1322 scientific verses in Quran, including iterated ones, that involve 20 percent of total verses of the Holy Quran. They believe that there are 61 verses about medical science in Quran.

It seems that these various statistics about the number of verses are resulted from existence of various points of views about interpretations and definitions of scientific verses. It is also true about interpreter's idea about verses conformity with achievements of experimental sciences. The current era, is the era of thriving of interdisciplinary sciences. At the same time, in the case of interpretation, scientific-interdisciplinary interpretation has also enjoyed a great improvement. Nowadays Quran researchers and experts of different sciences pay more attention to scientific discussions, presented in the Holy Quran. More and more projects, researches and scientific writings about scientific issues, raised in the verses of Quran, are exposed to the scientific society. Embryology and human creation stages, hadiths and medical sciences, mentioned in Quran, are important issues in the world. One of the most important axes of the verses of Quran is the matter of fetus creation that has been considered as the start point of human life. In general statistics, the Holy Quran has explained this matter fluently, in 41 chapters and 76 verses. It shows that embryonic stage is one of the most elegant stages of human life; this stage has many secrets and has amazed everyone.

**Bones formation in fetus**

The Holy Quran has talked about fetus creation in 19 verses.(1) some of the researchers believe that the Quran has introduced 7 stages for creation of fetus: 1- semen 2- coagulum 3- chewed meat (synthetic and unsynthetic) 4- bones 5- meat 6- settlement, shape and adjustment 7- spirit infusion

In the end of 20th century it was discovered by embryology that the meat, bones, hearing, vision and sex organs of body start formation from 3rd week of pregnancy and get their complete shape in 6 months.(2) prophet Mohamad

(peace be upon him) says: 42 nights after semen creation, the God sends an angel to form its sight, ears, eyes, shape, meat and bones(3).

In this article we try to inspect the verses of the Holy Quran that talk about bones formation:

this verse is :

then we created of the drop, a clot (of congealed blood) and we created the clot into bitesize tissue, then we created the bitesize tissue into bones, then we clothed the bones with flesh,

14th verse of Momenoon chapter, its translation is: we changed the little floating water to coagulated blood; then changed the coagulated blood to chewed meat; changed the chewed meat to the bones and covered the bones with the meat.

This Holy verse, not only refers clearly to bone formation, before muscle formation (it refers to meat as the last cover, those who are familiar with autopsy know that muscles are like a cover around the bones), but also refers to differentiation stage that starts from a small chewed meat.

The supreme God, also about two stages of embryo creation in human: then we created the bitesize tissue into bones, then we clothed the bones with flesh,. It means: then we changed the chewed meat to the bones and covered the bones with meat. The fourth stage of embryo formation is bone formation. This stage is mentioned after chewed meat formation stage in Quran. This stage starts in the end of 6th week of pregnancy, during which chewed meat changes to bone, then embryo gradually gets human form. In this stage the embryo that was previously chewed meat, is completely changed into bone.

God mentions in this case: then we created the bitesize tissue into bones it means: in fact the meat that later covers the bones and creates a big proportion of human figures, is different from the meat that changes to the bone; this is one of the miracles of Quran that introduces real and original embryo. According to above mentioned information, bones are created first and then the meat covers them. Meat creation is the fifth and last stage of basic revolutions in completion of physical structure of the body. In this stage bare bones get meat, nerve, big and small vessels; then an beautiful skin covers it like garment to protect the meat. The God has indicated in the Holy Quran: then we clothed the bones with flesh: in this verse, the word means to wear garments, but God has used it to refer to the meat that covers us like garment. Its role may be protecting meat tissues of the body, which like a protection layer preserves the bones against hurts and damages. It also protect body against cold and warm weather. (1) Ayatollah Marefat, considers this stage of bone and muscle formation to be in 5th, 6th and 7th week after semen creation.(2) When this verse considers muscles as garment, it conveys this reality that our body without garment will be very ugly. Furthermore, the garment protects body and the muscles protect the bones, without them the bones can be hurt or damaged because of batteries. (3)

The God mentions in the Holy Quran: then we created the bitesize tissue into bones and before saying that says in the same verse: then we made him, a drop, in a secure receptacle (the womb). . In this verse the word (to place) has changed to the word (to create). The word not only means to create but also means to create something of a high quality, some believe: the original meaning of is to determine the size of something.(4) so the gist of this verse is not just about bone formation but also about battered meat formation that enjoys some special bone qualities. In other words, the bone is the battered chewed meat, the meat that has been settled, adjusted and differentiated. The 5th verse of Haj chapter says: from a bitesize tissue formed and unformed, it means that the chewed meat is classified into differentiated and undifferentiated ones; the embryo's bone formation stage is a good example of differentiation stage of the embryo.(1) Experts of embryology have emphasized that the original human embryo is divided into 3 layers and have mentioned that all embryo cells can't change into bone. The bone cells (scrotum) are made of central layer (Mesoderm). Cartilaginous and bone cells that are made from central layer of embryo, cover them as garment even sooner than muscle and skin cells. These scientific achievements confirm with provision of the Holy Quran; this is one of scientific miracles of the Quran.(2) in 3rd week of embryo growth 3 layers are created: Ectoderm, Mesoderm and Endoderm. The organs that have connection with the outside world are made from Ectoderm layer; organs like: nerve system, sense cover, ear, nose, eye and so on. Scrotum organs like urine and genital systems are created from Mesoderm layer. Gastric, intestinal, respiratory and bladder systems are made from Endodermic layer. According to indicated information, cartilages and bones are made of internal layer of Mesoderm, which are covered by Ectoderm and Endoderm, the layers from which the meat of body like skin and glands are made. Creation of the cells that produce cartilage and bone starts in 4th week of pregnancy; but muscle cells are made after that.(3) it was previously mentioned that internal layer of Mesoderm creates cartilages and the bones. Cartilage is a type of connective tissue that can withstand a lot of pressure due to its plastic properties, and supports soft tissues of the body. Each cartilage has a

basic material that dissolves in boiling water and makes a material that is called cartilage jelly or chondroitin. The color of cartilage is to some extent similar to the color of the water; because of metabolic changes it can be yellow in old people. Cartilage formation is the first step of bone formation. Cartilage is a tissue of Mesenchymal that is created in the end of fourth week of embryo; first cartilage is created then it changes to the bone. So, bone formation in fetus involves two stages: 1- membrane ossification 2- cartilage ossification. The bone that is first made in the baby's body is temporarily and completely immature. The embryo's bone tissue gets eliminated gradually after birth and mature bone substitutes it. The interesting point about bone tissue is the fact that it has two opposite actions from its birth to its death: bone creation and bone destruction.(1) The Holy Quran indicates stages of embryo's creation as follows: semen, coagulum, chewed meat, bone, meat and soul infusion; it is mentioned that the last stage occurs after embryo's physical creation and in the other word after settlement of the body (balance of the body). The Formation process of bones, muscles and body organs showed us that bones formation precedes muscle creation; and after these stages, the embryo gets a perfect apparent form during 5th month or after the end of 4th month. During the 5th month, mother will feel embryo's movements very well, a sign of soul infusion stage. These scientific achievements confirm with the teachings of Quran; they are signs of scientific miracles of the Quran.

The sample interpretation of the verse:

The writer of the " tafsir fee zallal" says an interesting sentence about the above mentioned verse; he says after coagulum and chewed meat stage, the whole cells of the embryo change into bone cells, then muscles and meat cover it gradually.

So the sentence "we clothed the bones with flesh" is a scientific miracle, discovering this important issue that was unknown for the people of that time. The Quran doesn't say that we changed the chewed meat into the bone and meat, it says we changed the chewed meat into bone and covered it with meat. This means that the chewed meat first changes into the bone then the meat covers it.(1)

### Inspection

This scientific miracle of the Quran that the chewed meat first changes into bone cells then the bone is covered with meat and muscle, can be discussed in two different ways.

1- the above mentioned matter is not scientifically possible; because the experts of embryology believe that the original human embryo is divided into 3 layers; the bone cells (scrotum), are made from the central layer (Mesoderm), so we infer that all cells can't change into bone.

2- The God mentions in the Holy Quran: then we created the bitesize tissue into bones (2)nd before saying that says in the same verse: then we made him, a drop, in a secure receptacle (the womb).. In this verse the word ??? (to place) has changed to the word ??? (to create). The word ??? not only means to create but also means to create something of a high quality, some believe: the original meaning of ??? is to determine the size of something.(3) so the gist of this verse is not just about bone formation but also about battered meat formation that enjoys some special bone qualities. In other words, the bone is the battered chewed meat, the meat that has been settled, adjusted and differentiated. In the verse: from a bitesize tissue formed and unformed,(4) the chewed meat is classified into differentiated and undifferentiated ones; the embryo's bone formation stage is a good example of differentiation stage of the embryo. So we infer that there are two kinds of chewed meat: synthetic and non-synthetic ones; the synthetic one is the differentiated embryo whose organs and bones are specified. So we have two kinds of chewed meat: bone maker and non-bony one; differentiation means to divide the chewed meat into different kinds (bone, organs and...). The intention of the Quran is not to say that the whole chewed meat changes into bone, but it means that different parts of the chewed meat create different parts of the embryo like: bone, members, organs, meat and so on; so the interpretation mentioned in sample interpretation part, saying that the chewed meat completely changes into bone doesn't confirm with 14th verse of Momenoon chapter. 14th verse of Momenoon chapter has very amazing scientific points, confirming with the most recent achievements of embryologists; this proves the Scientific glory of the Holy Quran. But these information do not completely prove the scientific miracle of the Quran, because these information are very general and limited, we can not say these general information were unknown before the Quran was revealed. people in old times have surely seen others' aborted babies during their life, or at least have seen animals' still born babies. so people have been aware of difference between complete and incomplete embryo; as a result they have been aware of this fact that the meat is placed on the bone and covers it like garment. so because of old people's awareness of other people and animal's embryo and because of this fact that the information presented by the Quran are very general we can't say that these information are scientific miracle of the Holy Quran; but the way the Quran arranges the stages (chewed meat, bone, covering bone with meat) can be considered as a miracle.

## **Bone formation precedes other body organs formation, according to the Holy Quran**

We can say that embryo formation stages are: heart creation, bone creation, other organs and finally meat creation. Bone formation and heart creation occur in 5th week of pregnancy, and other organs creation occurs from 6th week; in the 5th week that bone formation occurs, the embryo doesn't still have other organs and tissues. organs and tissues come into creation in 6th week of pregnancy. We see some information in this case, in English Wikipedia, about 5th and 6th week of pregnancy:

In 5th week of pregnancy the embryo's heart starts beating, hands and legs start growing and bones take form; in 6th week the eyes come into creation and organs start growing.

In the following two pictures, the first one is related to bone formation in 5th week that other organs are not still formed; the second picture is related to the creation of body organs that are formed in 7th week, it shows that bones are created first then the meat covers them. Now, we inspect different stages of embryo formation in verses from number 12 to number 14 of Momenoon chapter: we created the human from an essence of clay:/ then we made him, a drop, in a secure receptacle (the womb)/ then we created of the drop, a clot (of congealed blood) and we created the clot into bitesize tissue, then we created the bitesize tissue into bones, then we clothed the bones with flesh, and then produced it an other creation. blessed is allah, the best of creators!.

To tell the truth, we created human from cleared mud(12) then we put him as a semen in a firm place(13) then we changed semen into coagulated blood and changed coagulated blood into meat, and changed the meat into bone and covered it with a thin layer of meat, then improved it into another creature, how great is the God, He is best creator(14). In above verses, embryo creation stages have been introduced very well; according to described stages we see that the semen formation precedes bone formation, then bone is covered with meat. The question is: how the Holy Quran has been able to describe embryo creation stages in 1400 years ago, without radiology sets?

## **CONCLUSION**

Embryology clearly confirms the worthy teachings of the Holy Quran; even hearing some sounds after the end of 6th month of pregnancy and eye's sensitivity to light after the end of 7th month make us aware of some elegances concealed in the Holy Quran: body settlement precedes soul infusion and soul infusion precedes getting the ability of hearing and seeing.(1)The most important natural sign of soul infusion is intentional movements of the embryo that can be felt by mothers after four months of embryo creation that can be by itself an objective sign of soul infusion. The activation of one of sixth senses of embryo can also be considered as a sign of soul infusion even if its recognition is very difficult without medical checkup and precise scientific tests. None of the signs, such as heart bumps,reflective reactions, gender identification and formation of members and organs of the body can't certainly prove soul infusion. Generally speaking all creatures including human beings are created of water and soil; most of the body is made from water. After placing embryo in womb, in the middle of 3rd week, and almost in the end of second month of pregnancy, the stage of differentiation of germ layers comes to end. We can call this stage as synthetic chewed meat or differentiation stage. Cartilage and bone cells that are created from embryo's central layer (mesoderm) come into being sooner than muscle and skin cells; in fact cartilage and bone cells are covered by other two layers of embryo (ectoderm and endoderm) and muscle and skin cells cover them as garment; it is crystal clear for those who are familiar with autopsy that muscles cover bones like garments. The God names in the Holy Quran the stages of embryo creation as: semen, coagulum, bone, meat and soul infusion that the last step occurs after settlement or completion of embryo's physical creation. In some hadiths of Shiites and Sunnis it has been indicated that soul infusion occurs in the 4th month of pregnancy or a little later; that was explained by referring to the ways in which bones, muscles and organs were created. Bones formation precedes muscles creation and the embryo gets its own complete apparent form after organs' completion, this occurs after 4th month of 7pregnancy or during 5th month of pregnancy. During the 5th month of pregnancy the mother feels the embryo's movement that occurs because of soul infusion.

The Holy Quran says with very fluent words that the miracles of embryo are so broad that goes beyond human knowledge. Even if embryology has made so much progress, many unsolved secrets of embryo creation and growth is still unsolved. There are many wonders about womb and embryo creation. Referring to this fact, the Holy Quran invites people to study about this matter, in order to become familiar with its different stages and get familiar with the God's glory. The Quran has explained all stages of creation and completion of embryo with a simple language in order to make it understandable for publics. The information of the Quran about the embryo is so precise that it has not probably

been understandable for the people of 7th century. In other words, if these verses are correctly researched and studied it will be cleared that the information of Quran about embryo has not been understandable for the people of that time. Even the embryology knowledge couldn't prove some of these data until it changed its old method of scientific study during past centuries; in the middle of 20th century embryology changed from a describing science into a scientific knowledge. Off course for comprehensive research in this case, we need to classify the verses of the Holy Quran correctly.

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