

GLIMPSE ON AYURVEDA PERCEPTIONS OF FETAL DEVELOPMENT - A LITERARY REVIEW

Juhee Tayde¹, Meena Bhujade², Alka Charde³

¹PG student; ²Prof & HOD; ³Reader;

Department of Rachana Sharira, Bhausaheb Mulak Ayurved Mahavidyalaya, Nagpur, Maharashtra, India

Email: juhitayde@yahoo.com

ABSTRACT

Fetal development is the most crucial phase of life. It is the foundation for entire lifespan. Ayurveda is the holistic science and Ayurveda principles have great emphasis over healthy progeny. Many new investigation tools have evolved due to tremendous development in health science so, it has become very easy to get idea about fetal development but in ancient era there were no such techniques; still the description found in Ayurveda treatise is very scientific and somewhat similar to modern science. In spite of advances in therapeutics and drugs, many congenital malformations and diseases are found in babies. So, the parents are attracting towards Ayurveda treatment for a healthy progeny. Before going for the actual treatment, preconception counseling is very important and for this purpose it is must to know the fetal development step by step along with monthly regimens to be administered to pregnant woman. So, here an effort has been done to write about Ayurveda perceptions of fetal development.

Keywords: Ayurveda, fetal development, preconception counseling, healthy progeny.

INTRODUCTION

Ayurvedic embryology explains month wise fetal development along with the antenatal care of the pregnant woman which is found to be true on the basis of modern science. By adopting various methods described in Ayurvedic embryology, smooth pregnancy can be ensured. Similarly good health can be given to mother and child. Month wise fetal development by Ayurveda Acharyas is described below in detail.

First month-

According to Acharya Charaka, 'Atma' possessing concept all the qualities gets mixed up or vitiated by the *bhutas* to attain the shape resembling the

'*shleshma*', in which all the body parts are present but not visible¹. According to Sushruta the Embryo is in the shape of '*Kalala*'². According to Vagbhatta the description is same as done by Sushruta. Harita describes that during first day it attains the form of '*Kalala*' after union with *Shukra*. In ten days *Shonita* (ova + sperm) becomes '*Budbuda*'. In 15 days it becomes '*Ghana*'. In 20 days a mass of flesh and in 25 days it becomes more conspicuous³. According to Bhava Prakasha the *Shukra* and *Artava* deposited in the uterus remain in their original liquid state during 1st month⁴.

Second month:

According to Acharya Charaka the Embryo becomes a solid mass during the second month. If this solid mass has oval (*pinda*) shape the child would be a male, if elongated (*peshi*) the female and with rounded (*arbuda*) mass the hermaphrodite⁵. Sushruta opines that the accumulated *mahabhutas* get processed by the combined action of *Sleshma*, *Pitta* and *Vayu* and becomes solid⁶. The description of foetal development during second month in both Vagbhatta and Bhava-prakash is almost the same as given in Sushruta. *Harita*, however, suggests that in 50 days buds of future parts in embryo come up in the second month⁷.

Third month:

According to Acharya Charaka during the third month all the *Indriyas* and minor body parts become apparent⁸. Sushruta is more specific in this regard and states that five buds, one for head and four for upper and lower extremities develop in the third month⁹. Ashtang Aangraha in this regard agrees with Sushruta with slight specification that all *Indriyas* and body parts develop simultaneously¹⁰. In Ashtang Hridaya it is said that in the third month with the development of head the embryo is capable of feeling sorrow and happiness¹¹. Bhava Prakash and Charaka have the same opinion. *Harita* says that in this month, hands and legs grow. Acharya Kashyap describes that Embryo starts quivering, develops consciousness and can feel pain. Chakrapani mentions of development of body hair in the third month¹².

Fourth month:

Charaka describes that in the fourth month various body parts become more observable and stability to the foetus comes in this month¹³. According to Sushruta body parts become conspicuous. Manifestation of heart and consciousness associated with heart also occurs in the fourth month¹⁴. The opinion of *Vagbhatta* is similar to Charaka whereas the description of growth in fourth month in *Bhava Prakash* is same as done by Sushruta. *Kashyapa*

mentions the Stability of the foetus in this month¹⁵. According to *Harita* in 3 and 1/2 month head becomes stronger and in 4th month *lanugo* appear¹⁶.

Fifth month:

According to Charaka accumulation of flesh and blood in foetus is relatively more in fifth month¹⁷. Sushruta says ‘*Mana*’ becomes more enlightened. Ashtanga Sangraha describes the accumulation of more flesh and blood and ‘*mana*’ become more enlightened¹⁸. According to Astanga Hridayakar consciousness developed in this month¹⁹. Bhava Prakash opines same as Sushruta. Kashyapa opinion is same as Charaka. *Harita* says that Foetus becomes capable to live independently in fifth month²⁰.

Sixth month:

Acharya Charaka describes relatively more accumulation of energy and complexion²¹. Sushruta says more enlightenment of ‘*buddhi*’ occurs in sixth month²². Ashtanga Sangraha describes development of hair, body hair, nails, bones, tendons and increase in energy and complexion in sixth month²³ while Astanga Hridaya describes development of tendons, vessels, body hair, hair, skin, energy and complexion²⁴. Opinion of Bhava Prakash is same as Sushruta. Acharya Kashyap says more development of energy, complexion and ‘*ojas*’ occurs in sixth month²⁵. *Harita* describes Quivering of foetus.

Seventh month:

According to Charaka all the tissues of foetus (muscles, blood, bone etc.) get proper nourishment²⁶. Sushruta says all the major and minor body parts are more visible²⁷. According to Vagbhatta all body parts are fully developed. Acharya Kashyapa says whole body gets completely associated with *vata*, *pitta* and *kapha* in seventh month²⁸ Bhava Prakash opinion is same as Sushruta.

Eighth month:

The description of foetal growth in the eighth month given in Charaka, Vagbhatta, Kashyapa and Bhavaprakash is more or less the same. According to them due to immaturity of foetus, the ‘*ojas*’ remains

unstable. It moves from mother to foetus and from foetus to the mother through rasa carrying channels. Due to the transfer of 'ojas' mother and fetus become happy and dull alternatively. If delivery takes place the life becomes doubtful and they do not consider this month for delivery. According to Sushruta due to instability of 'ojas' child born in this month dies due to absence of 'ojas' and influence of 'Nairruta' portion²⁹. According to *Harita* in this month 'pachakagni' (digestive enzymes) starts func-

tioning and in ninth month activities are more apparent³⁰.

Ninth month:

According to Acharya Charaka after 9th month it is time to deliver the foetus. Sushruta says the fully developed fetus is ready to deliver and normal time described for delivery is 9 month to 12 months³¹.

Ayurveda science has described physiological as well as psychological way of fetal development. Phases of fetal development are summarized below in table no. 1.

Table 1: Fetal development according to Ayurveda Science

Sr. No.	Intrauterine age	Development
1.	First month	Kalal form
2.	Second month	The accumulated <i>mahabhutas</i> get processed by the combined action of <i>Sleshma</i> , <i>Pitta</i> and <i>Vayu</i> and becomes solid.
3.	Third month	all the <i>Indriyas</i> and minor body parts become apparent
4.	Fourth month	various body parts become more observable and stability to the foetus comes in this month; Manifestation of heart and consciousness associated with heart also occurs in the fourth month
5.	Fifth month	'Mana' becomes more enlightened
6.	Sixth month	more accumulation of energy and complexion, enlightenment of 'buddhi' occurs
7.	Seventh month	all the major and minor body parts are more visible, whole body gets completely associated with vata, pitta and kapha
8.	Eighth month	<i>Asthir Ojj Dhatu</i>
9.	Ninth month	Time to deliver

Table 2: Fetal development according to Modern Science³².

Sr. No.	Intrauterine age	Development
1. ³³	First month	As the fertilized egg grows, a water-tight sac forms around it, gradually filling with fluid. This is called the amniotic sac, and it helps cushion the growing embryo. The placenta also develops. baby is about 1/4 inch long
2.	Second month	baby's facial features continue to develop. Each ear begins as a little fold of skin at the side of the head. Tiny buds that eventually grow into arms and legs are forming. Fingers, toes and eyes are also forming. The neural tube (brain, spinal cord and other neural tissue of the central nervous system) is well formed. The digestive tract and sensory organs begin to develop. Bone starts to replace cartilage. The head is large in proportion to the rest of the baby's body. By the end of the second month, your baby is about 1 inch long and weighs about 1/30 of an ounce. At about 6 weeks, baby's heart beat can usually be detected. After the 8th week, your baby is called a fetus instead of an embryo.
3.	Third month	Baby's arms, hands, fingers, feet, and toes are fully formed. By the end of the third month, baby is fully formed. All the organs and extremities are present and will continue to mature in order to become functional. The circulatory and urinary systems are working and the liver produces bile. At the end of the third month, baby is about 4 inches long and weighs about 1 ounce.

4.	Fourth month	Baby's heartbeat may now be audible through an instrument called a Doppler. The fingers and toes are well-defined. Eyelids, eyebrows, eyelashes, nails, and hair are formed. Teeth and bones become denser. The reproductive organs and genitalia are now fully developed. Baby is about 6 inches long and weighs about 4 ounces.
5.	Fifth month	Quickening starts. Hair begins to grow on baby's head. Baby's shoulders, back, and temples are covered by a soft fine hair called lanugo. Vernix caseosa develops. By the end of the fifth month, baby is about 10 inches long and weighs from 1/2 to 1 pound.
6.	Six month	Baby's skin is reddish in color, wrinkled, and veins are visible through the baby's translucent skin. By the end of the sixth month, baby is about 12 inches long and weighs about 2 pounds.
7.	Seventh month	Baby's hearing is fully developed. He or she changes position frequently and responds to stimuli, including sound, pain, and light. The amniotic fluid begins to diminish. At the end of the seventh month, baby is about 14 inches long and weighs from 2 to 4 pounds.
8.	Eighth month	Baby will continue to mature and develop reserves of body fat. Baby's brain is developing rapidly at this time, and your baby can see and hear. Most internal systems are well developed, but the lungs may still be immature. Baby is about 18 inches long and weighs as much as 5 pounds.
9.	Ninth month	Baby continues to grow and mature: the lungs are nearly fully developed baby's reflexes are coordinated so he or she can blink, close the eyes, turn the head, grasp firmly, and respond to sounds, light, and touch.

Dauhrivadavastha- It is the phase that every pregnant mother experiences and has its own importance. During this period, fetal heart is developed and it expresses the feelings through mother. It is advised

not to ignore these cravings because it can hamper the natural fetal development. *Dauhrida avastha* period described by different Acharyas is mentioned below in Table no. 3.

Table 1: *Dauhrida Avastha Kaal* according to different Acharyas

Sr No.	Acharya	Kaal
1	Charaka	In third month of pregnancy
2	Sushruta	In fourth month of pregnancy
3	Vagbhata	3 Paksha (45days) to fifth month of pregnancy
4	Kashyapa	In third month of pregnancy

DISCUSSION

The whole process of development of the fetus from two cells to mature fetus is called *Garbhavakranti*. *Garbhavakranti* includes the basis of the earliest embryology which was known to the human being. In the Ayurvedic texts the process of monthly development of the fetus is explained clearly. The explanation of the month wise development of the fetus as per modern embryology can be correlated with the Ayurveda view. This description quite similar but the concept of enlightenment of *Buddhi*, *Asthira Ojj*, *Mana* etc. maintains the antiquity of Ayurveda.

CONCLUSION

Ayurveda fetal development is comprised of four objects namely *Ritu*, *Kshetra*, *Ambu* and *Beeja*. All these four factors are very important for initiation of life. Ayurveda also explains importance of pre conception purification of body so that the *Stribeeja* and *Purusha beeja shuddhi* can be achieved. It is very clear from above explanations that Ayurveda is more focused about a healthy progeny; so every wise physician should advice the couples about Ayurveda practices related to pregnancy and obviously the mother and child care.

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