

An Anatomical Description of The Quranic Verse: Three Veils of Darkness in Surah Al Zumar

Siti Rosmani Md Zin^{1*}, Munirah Abd Razzak², Khadher Ahmad², Normadiah M. Kassim³

¹*Medical and Basic Dental Sciences Unit, School of Dental Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kota Bharu, Kelantan, Malaysia*

²*Department of Al-Qur'ān and Al-Hadith, Academy of Islamic Studies, Universiti Malaya, 50603, Kuala Lumpur, Malaysia*

³*Selangor, Malaysia*

ABSTRACT

Human development is a complex process discussed in many texts, including the Qur'ān. One of the verses describing human embryology is Surah Al-Zumar, 39:6 (...He creates you in the wombs of your mothers: creations after creation in three veils of darkness...). Exploring the different anatomical aspects when translating Qur'ānic terms is essential. These nuances often carry unique interpretations and perspectives worth examining, revealing deeper layers of meaning not fully captured in traditional translations. This manuscript aims to present a biological perspective in translating the phrase or terms "three veils of darkness" used in the Qur'ānic verse with appropriate anatomical terminologies. The sources for this article include the Qur'ān, Hadiths, and published literature. Some Arabic words in the cited verse are elaborated from a slightly different biological perspective compared to available translations. In this manuscript, the "three veils" mentioned in surah Al-Zumar are defined as the uterine, chorionic, and amniotic cavities. By refining and expanding the anatomical correlates of each "veil," this study intends to offer a clearer and more precise interpretation that builds upon and improves the original hypothesis, while maintaining its original context and significance across different linguistic settings. This additional viewpoint on the links between Qur'ānic words and modern anatomical terms highlights the remarkable language of the Holy Book, bestowed upon us by Allah the Almighty.

Keywords: *Veils of darkness, Qur'ān, Al-Zumar, uterus, human embryology*

INTRODUCTION

The Qur'ān has been proven to accurately describe the stages of human development, including fertilisation, implantation and organogenesis (Zaheer, 2016). Islamic scholars and well-known scientists have explored and described all human developmental stages mentioned in the Qur'ān (Khattak et al., 2006; Ahmad, 2024). There are 10 verses from the Qur'ān associated with embryological development. Among these, a verse from Surah Al-Zumar, 39: Verse 6 is selected for further review:

يَخْلُقُكُمْ فِي بُطُونِ أُمَّهَاتِكُمْ خَلْقًا مِّنْ بَعْدِ خَلْقٍ فِي ظُلُمَاتٍ ثَلَاثٍ

This verse is chosen due to the inconsistency in its interpretation and the terminology used by earlier scholars. This review also aims to provide a different perspective by associating

the words of the Qur'ān with suitable anatomical terms. The Qur'ān is a sacred scripture from the Almighty, with specific terminologies selected by Allah that carry meanings and explanations. Therefore, translating the original Arabic words from this revered book is not just a simple language conversion. In fact, most translations depend on Qur'ān exegeses alongside the linguistic skills of the translators (Al-Azzam et al., 2015).

The interpretation of the verse in Surah Al-Zumar presented in this study aligns with the earlier work of Hassanein (2015). Hassanein justified his interpretation of the “three dark zones” as the uterine, chorionic vesicle, and amniotic cavities, emphasising the importance of these cavities in supporting normal embryological development through the absence of light within them. Meanwhile, the present work provides a more detailed clarification by incorporating embryological and anatomical insights into these structures. Nonetheless, it is hoped that the discussion offered in this review will encourage further exploration of the Qur'ān, which continuously amazes us with its contents.

METHODOLOGY

Apart from the Qur'ān, Hadiths, and relevant books, articles describing the key area of interest were collected from various databases and published sources. The approach was to retrieve all pertinent references by searching for citations or established writings that contain the following keywords: “human embryology and Al-Qur'ān” (Title/Abstract), or “Three veils of darkness” (Title/Abstract), OR “Three darknesses and Al-Qur'ān” (Title/Abstract). Additional information was obtained using a combination of the keywords “ظُلُمَتِ” and “بُطُونٌ” in the Qur'ān and Hadiths. The selected Qur'ānic verse and Hadiths were reviewed and approved by two authors of this manuscript, experts in Qur'ān and Hadith studies, respectively. Suitable references were identified by examining the titles and abstracts, and some references cited by the sources were further explored for supplementary information.

AL-QURAN AND EMBRYOLOGY

The Qur'ān was revealed to humanity more than 1400 years ago and is said to contain scientific knowledge across various fields (Anwar and Ansar, 2018; Rehman, 2003). The fact that the Qur'ān appeared when the Arabs lacked modern devices or technology strongly supports the idea that this revelation came from Allah S.W.T (Mir, 2019).

Furthermore, it was given to a man widely known to be illiterate and lacking formal education. This demonstrated that the Qur'ān was revealed by the Almighty through Prophet Muhammad (peace be upon him), opening doors to the pursuit of knowledge. Additionally, early historical sources about Prophet Muhammad's (peace be upon him) life highlighted and emphasised the integrity of his character. The idea that he plagiarised Hellenic embryology while claiming the Qur'ān as the word of God is implausible (Tzortzis, 2011a). There are several reasons for this. For example, his enemies even recognised him as the “Trustworthy” (Lings and Barrett, 1983). Furthermore, many claims made by the ancient Greeks have been proven incorrect and are not present in the Qur'ān. For instance, Aristotle's idea that fertilisation results from a mixture of semen and menstrual blood is not reflected in the Qur'ānic text (Tzortzis, 2011b).

The Qur'ān revelation enabled researchers and Muslim scholars to comprehend different stages of human development. These facts were later confirmed by scientists,

including the modern embryology expert Professor Keith Moore and other non-Muslim scientists (Mohsen et al., 2011; Ansari, 2001). Every event described in the Qur'ān consistently contains specific details in its words or expressions. For example, Surah Al-Mu'minūn, 23: Verse 12-14, was examined in detail a decade ago, revealing Allah the Almighty's unmatched knowledge.

We created man from a quintessence of clay. Then we placed him as a drop of sperm in a secure resting place. Next, we transformed the sperm into a clot of congealed blood; from that clot, we formed a lump of flesh; afterwards, we shaped bones from that lump and clothed them with flesh; finally, we developed another creature from it. So, blessed be God, the best of creators (Ali, 2016).

Apart from Surah Al-Mu'minūn, Surah Al-Zumar 39: Verse 6 is another verse that mentions embryology or human development.

SURAH AL-ZUMAR

خَلَقَكُمْ مِنْ نَفْسٍ وَاحِدَةٍ ثُمَّ جَعَلَ مِنْهَا زَوْجَهَا وَانزَلَ لَكُمْ مِنَ الْأَنْعَامِ ثَمَانِيَةَ أَزْوَاجٍ ۚ يَخْلُقُكُمْ فِي بُطُونِ أُمَّهَاتِكُمْ خَلْقًا مِّنْ بَعْدِ خَلْقٍ فِي ظُلُمَاتٍ ثَلَاثٍ ۚ ذَلِكُمْ اللَّهُ رَبُّكُمُ لَهُ الْمُلْكُ ۚ لَا إِلَهَ إِلَّا هُوَ ۚ فَاتَىٰ تُصْرَفُونَ

(Qur'ān: Surah Al-Zumar, 39: Verse 6)

He created you all from a single person, then made, of similar nature, his mate; and He sent down for you eight heads of cattle in pairs. He develops you in your mothers' wombs in stages, one after another, within three veils of darkness. Such is God, your Lord and Cherisher: to Him belongs all dominion. There is no god but He; then how are you turned away (from your true Centre)?" (Ali, 2016).

For this review, we will focus only on the part that contains the biological terms:

يَخْلُقُكُمْ فِي بُطُونِ أُمَّهَاتِكُمْ خَلْقًا مِّنْ بَعْدِ خَلْقٍ فِي ظُلُمَاتٍ ثَلَاثٍ ۚ

Indeed, the words of the Qur'ān are of a higher level of quality. They are consistently elaborated upon by earlier Islamic scholars, which is later supported by modern scientific knowledge. Surah Al-Zumar 39: Verse 6 is no exception, but it is noted that the translations and explanations of this part of the verse have slight variations.

Other English translations of this verse are as follows:

..... He creates you in the wombs of your mothers, a creation after a creation, in triple darkness..... (Shakir, 2014).

..... He creates you in the wombs of your mothers, creation after creation, within three darknesses..... (<http://quran.com/39/6-16?translations=20>).

English translations define the word “بُطُونٍ” (*butun*) as womb (uterus) and belly. In Bahasa Melayu and Indonesia, it was translated as “*perut*” or belly:

..... Dia menciptakan kamu di dalam perut ibu-ibu kamu dalam keadaan suatu ciptaan sesudah sesuatu ciptaan dalam kegelapan yang tiga(Amrullah, 2017).

..... Dia (Allah) menjadikan kamu dalam perut ibumu, kejadian demi kejadian dalam tiga kegelapan (Nasution, 2020).

These Malay and Indonesian translations of the verses refer to the creation of a human being within the mother's "*buṭūn*", which is translated as "*perut*", meaning belly. The environment of the belly where the stages of creation occur is described as three darknesses. This contrasts with the English translation that defines the word "*buṭūn*" as a womb. Therefore, further discussion on this matter is necessary to understand and clarify the meaning of the words "*buṭūn*" and its connection to the mention of the three darknesses in the Qur'ān.

The term “بُطُونٌ”

Many verses in the Qur'ān that contain the word “بُطُونٌ”. Some of these verses are translated as 'belly' and others as 'womb', depending on the context of the verse (<http://holyquran.site/#1:1>).

A more detailed linguistic analysis of the triliteral root ب ط ن (bā ṭā nūn), which appears 25 times in the Qur'an, provides additional context for the interpretation in this study. This root appears in five derived forms: twice as the verb بَطَنَ (baṭana) and twice as the noun بُطْنَةٌ (biṭānat). Additionally, it is mentioned 17 times as the noun بَطْن (baṭn), three times as the active participle بَاطِن (bāṭin), and once as بَاطِنَةٌ (bāṭīnat). Notably, بَطْن (baṭn) frequently refers to the inner part of something, such as a valley's interior or the womb, highlighting the concept of inner depth or concealment. This semantic pattern aligns with the interpretation of the “three veils of darkness” as anatomical layers that enclose and conceal the developing embryo. Recognising how the Qur'ān consistently uses this root to signify inwardness, and internality underpins the relevance of this term to embryological contexts and supports the proposed interpretation.

The word “بُطُونٌ” was also mentioned in a Hadith recorded by al-Bukhārī and Muslim in their Sahih books. Translation of certain parts of the Hadith is as follows:

On the authority of Abū ‘Abd al-Raḥmān ‘Abdullāh ibn Mas‘ūd (may Allah be pleased with him), who said: The Messenger of Allah (peace be upon him), and he is the truthful, the believed, narrated to us:

Translation: Verily, each of you is brought together in his mother's abdomen for forty days in the form of a drop of fluid. Then it is a clinging object for a similar period. Thereafter, it is a lump looking like it has been chewed for a similar period. ... (Narrated by al-Bukhārī, hadith number 6594).

The Arabic word used in this hadith is “*butūn*” or “بُطُونٌ”, which was translated as ‘abdomen’. However, in other narrations, the word “*al-Raḥīm*” or “womb” is used. The word “womb” is closely connected to “*raḥmah*”, which means mercy, illustrating the association of mercy towards kin. The Prophet (peace be upon him) said:

Translation: Verily, the womb (al-Raḥīm) has taken its name from al-Raḥmān (the All-Merciful). Allah has said, ‘Whoever maintains your ties, I shall maintain his ties. Whoever cuts you off, I shall cut him off’ (Narrated by Aḥmad, hadith number 1659).

Lisān al-‘Arab, one of the most comprehensive dictionaries of the Arabic language, authored by the philologist, historian, and Islamic scholar Ibn Manẓūr (died 1311 CE / 711 AH), interprets “بُطُونٌ” as the plural form of “بَطْنٌ” which means “was hidden.” The dictionary

also describes the word as “became big, distended or inflated,” aligning with the increase in size of the uterus during pregnancy. According to the Modern Arabic Writing dictionary, “بُطُون” or “بَطْنٌ” signifies belly, stomach, abdomen, womb, interior, inside, or inner portion (Milton, 1974). It also defines “فِي بُطُونٍ” as inside, within, or in. Referring to the subsequent part of the verse, which explains the stages of development (creation by creation) occurring in the “بُطُون” of your mothers, we understand that “بُطُون” in this context refers to the “interior of” the womb or uterus, the specific site of development.

According to a *mufasssir* like Ibn Kathīr (1999), the three layers of darkness represent protection and concealment within the mother’s womb. They highlight the complexity and mystery of human creation, which only Allah fully understands. Al-Qurṭubī (n.d.) notes that these three layers serve as an essential form of protection for the foetus. The darkness is not merely physical but also symbolises the stages of creation that occur secretly and are entirely under Allah’s control.

A more detailed commentary by Al-Ṭabarī (1968) affirms that the “three layers of darkness” are both literal and symbolic, representing physical layers and the mystery of the creation process, which is entirely under the command of Allah. Meanwhile, al-Zuhaylī (1991) states that Allah (SWT) initiated the creation of human beings and shaped their development in the womb through distinct phases. Initially, the human begins as a sperm, then progresses to the stage of ‘alaqah (a blood clot), followed by muḍghah (a lump of flesh). Subsequently, bones start to form, later covered with flesh, veins, and nerves. Ultimately, the spirit is infused, completing the transformation into a perfect human being. This creation occurs within three layers of darkness, identified as the darkness of the stomach, the uterus, and the darkness of the placenta.

The Qur’ān uses the word بُطُون (the plural of بَطْنٌ) to describe where human development occurs. This refers to the uterus and aligns with what modern science has verified about pregnancy. Interestingly, this was revealed in the 7th century, long before scientists had a comprehensive understanding of the womb and foetal development. Although ancient physicians like Hippocrates (in the 5th century BCE) and Galen (in the 2nd century CE) described the womb (Saadat, 2009; Singer and Rosen, 2024) and the membranes surrounding the foetus, not everyone agreed with them. For example, Aristotle had a different and incorrect view on how babies form. The Qur’ān, however, accurately describes the concealed, dark environment of the womb called “three veils of darkness,” which we now understand as the uterine, chorionic, and amniotic cavities.

In fact, it is scientifically established that normal human implantation and development take place within the uterus, the exclusive organ of females. The developmental process encompasses pre-embryonic, embryonic, and foetal stages (Yahya, 1994; Sadler, 2012; Moore, 2013). This indicates that the Qur’ānic description of human development was scientifically precise and was revealed long before modern discoveries confirmed it.

Three darknesses

It is also interesting to note that “human development occurs in stages within three darknesses” was mentioned following the statement of “inside the womb of your mothers”. Therefore, the translation of the word “ظَلَمَتِ” in the verse should be closely associated with the cavity of the uterus.

All this while, “فِي ظُلُمَاتٍ ثَلَاثٍ” has been translated into English as “in three veils of darkness,” “within three darknesses,” “in threefold of darkness,” or “*di dalam tiga kegelapan*” (in Bahasa Melayu). In the Qur’ān, the word “ظُلُمَاتٍ” is mentioned multiple times, and all references share the same context of “ظُلُمَاتٍ” which refers to a situation or environment lacking light, whether it be faith or physical light. None of the verses translate “ظُلُمَاتٍ” as structures (e.g., layers or coverings). However, some “*Tafsīr* (further explanation)” for verse 6 of Surah Al-Zumar interpret the word darknesses as three structures: namely, the abdominal wall, uterine wall, and amnio-chorionic membrane (Moore, 1982; Syed, 1987; Syed, 2003; Ahmed, 2006; Saadat, 2009), or the amnion, chorion, and decidua (Mohamed, 1999; Mahdi et al., 2012). The three veils are also likely to refer to the belly, womb, and the cavity enclosing the womb (Lane, 2005).

Besides structures, the three darknesses were also believed to symbolise the three trimesters of pregnancy (Sayska and Arni, 2016). However, this contradicts the definition of darkness itself, which is described as a dark situation, area, space, or cavity. It is also important to note that the three darknesses are mentioned alongside the stages of human creation. This verse aligns with the spaces or cavities closely connected to different stages of prenatal development. Undoubtedly, previous Qur’ānic researchers have also referred to the “three darknesses” as cavities, namely, the pelvic, uterine, and amniotic cavity (Ali, 2016; Amrullah, 2017).

The discussion on “فِي ظُلُمَاتٍ ثَلَاثٍ” in the book of “*Sharh al-Hadith*” (Hadith explanation) refers to the two hadiths narrated by al-Bukhārī, (hadith numbers 6594 and 6595), which describe the process of human creation from semen in the mother's womb until the soul is blown by Allah SWT (Al-Bukhārī, 8: 122). Consequently, Imam al-Bukhārī placed these two hadiths in Kitāb al-Qadar, Chapter 1, indicating that they relate to the discussion of the process of human creation. As Ibn Hajar explained regarding the main title (Kitāb al-Qadar), it shows that everything does not happen but is preceded by the knowledge of Allah and His will (Ibn Hajar, 11: 481). Later, Ibn Hajar, in Fath al-Bārī, again mentions that the phrase “فِي ظُلُمَاتٍ ثَلَاثٍ” refers to the darkness of the placenta, the darkness in the womb, and the darkness in the abdomen (Ibn Hajar, 11: 481). These are described as the three darknesses, likely because the placenta is in the womb, within the abdomen.

However, as noted in the previous paragraph, the cavities should be found in the specific organ related to the stage of human development (i.e., the uterus) based on an anatomical view of the verse studied. Therefore, it is very likely that the three dark cavities are the uterine, chorionic, and amniotic cavities. This is also supported by the fact that all three cavities develop simultaneously during the early embryonic and foetal development stages within the uterus.

Uterine cavity

Development begins after successful fertilisation, which occurs in the ampulla of the uterine tube. The fertilised ovum, known as a zygote, undergoes a series of mitotic divisions; during these divisions, the daughter cells become smaller (blastomeres). This series of cell divisions is called “cleavage” (Sadler, 2012). As cell division progresses, a 16-cell blastomere mass is propelled towards the uterus. The blastomeres form a compact ball called a morula, just as it enters the uterine cavity around the fourth day after fertilisation. When the morula enters the uterine cavity, it sheds its protective coat, enabling the formation of the next developmental stage, the blastocyst. Blastocyst formation is a prerequisite for the process of implantation into the endometrium (Moore, 2018).

The uterine wall consists of three layers: the inner layer (endometrium), the middle layer (myometrium), and the outer layer (perimetrium). Implantation of embryos occurs in the endometrium (Figure 1). During pregnancy, the endometrium undergoes decidualisation, whereby the endometrial cells transform into highly specialised cells under the influence of progesterone. The modified endometrium, known as the decidua, later becomes part of the maternal component of the placenta. The decidua persists throughout pregnancy and is shed during childbirth. It is divided into three parts: i) decidua basalis, the part of the endometrium that supports the growth and development of the placenta; ii) decidua parietalis, the part that extends over the embryo on the cavity side; and iii) decidua capsularis, which continues with decidua basalis to encapsulate the embryo and the amniotic cavity (Sadler, 2012).

During pregnancy, the uterine cavity is the space between the decidua parietalis and decidua capsularis. This space later decreases and nearly disappears as both decidua fuse together, and the foetus gradually enlarges from the fourth month of pregnancy.

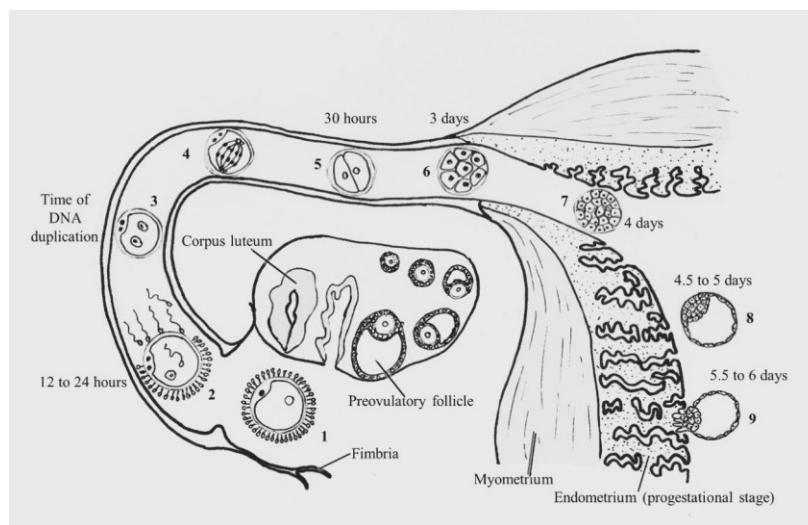


Figure 1. Events during the first week of human development. 1) The oocyte immediately after ovulation, 2) Fertilisation in the ampulla, 3) Pronuclei, 4) Spindle of the first mitotic division, 5) 2-cell stage, 6) Morula, 7) Advanced morula, 8) Early blastocyst, and 9) Early phase of implantation (Sadler, 2012; Moore et al., 2013).

Chorionic cavity

Once fertilisation is successful, a conceptus forms, encompassing all structures derived from the zygote, both embryonic and extraembryonic. As the conceptus enlarges, a vascular network begins to develop between the mother and the foetus. This process involves the differentiation of the blastocyst into an outer cell mass, which will become the trophoblast, and an inner cell mass, which will develop into the embryoblast. The trophoblast then further differentiates into cytotrophoblast and syncytiotrophoblast (Sadler, 2012).

By the 11th to 12th day of development, the blastocyst is fully embedded in the endometrial stroma. At the same time, cells of the syncytiotrophoblast penetrate further into the endometrial stroma and erode the endothelial lining of the maternal sinusoids. As a result of ongoing erosion, the maternal sinusoids connect with the syncytial lacunae. Maternal blood then enters the lacunar system and eventually establishes the uteroplacental circulation (Figure 2) (Sadler, 2012; Moore, 2013).

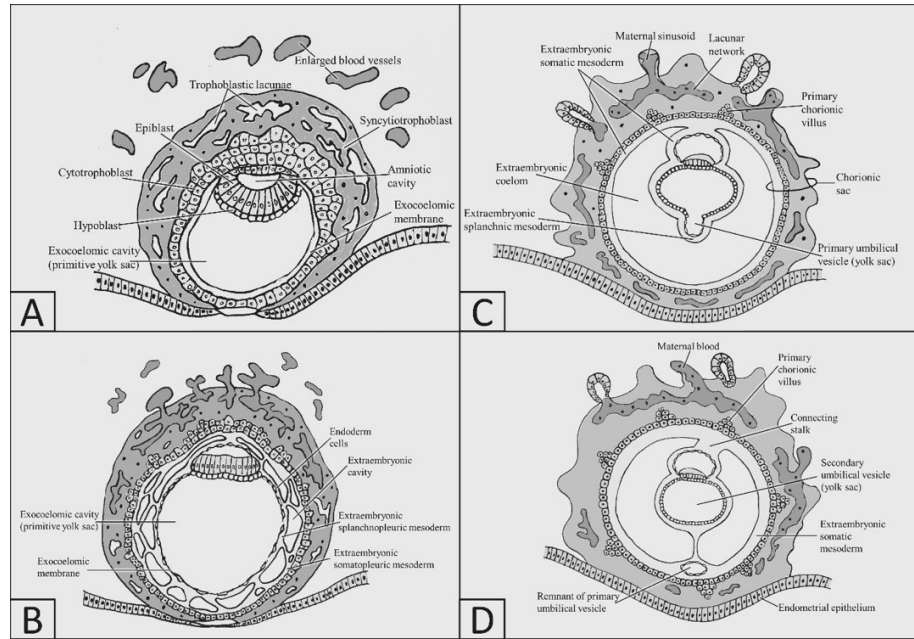


Figure 2. A) Day 8, B) Day 9, C) Day 13, D) Day 14 of development (Sadler, 2012; Moore et al., 2013).

Meanwhile, the extraembryonic mesoderm develops between the trophoblast externally and the amnion and exo-coelomic membrane internally. Soon after, large cavities form in the extraembryonic mesoderm that later merge to create the extraembryonic cavity, also known as the extraembryonic coelom or chorionic cavity (Figure 3) (Sadler, 2012). This fluid-filled cavity surrounds the amnion, which is the innermost membrane enclosing the amniotic cavity, and the umbilical vesicle. The extraembryonic coelom divides the extraembryonic mesoderm into the extraembryonic somatic mesoderm and the extraembryonic splanchnic mesoderm (Figure 2). The extraembryonic somatic mesoderm and the two layers of trophoblast together form the chorion. The chorion creates the wall of the chorionic sac, within which the embryo, the amniotic sac, and the umbilical vesicle (yolk sac) are suspended by the connecting stalk. The extraembryonic coelom is later called the chorionic cavity (Sadler, 2012).

Amniotic cavity

As the implantation of the blastocyst progresses into the endometrial stroma, the cells of the inner cell mass or embryoblast differentiate to become a double-layered germ disc, consisting of the epiblast and hypoblast. These germ layers are collectively referred to as the bilaminar germ disc. As development continues, a small cavity then appears within the epiblast, which later enlarges to form the amniotic cavity (Figure 2) (Sadler, 2012).

The amniotic cavity is a sealed sac that contains amniotic fluid, which surrounds and cushions the developing embryo. As the amniotic fluid increases in volume, it causes the amnion to expand and stick to the inner surface of the chorion, thereby obliterating the chorionic cavity (Figures 3) (Sadler, 2012).

These three cavities (uterine, chorionic and amniotic cavities) surround the developing embryo, and their sizes change correspondingly with the stages of the developing human (Figure 3). This is consistent with the Surah Al-Zumar, 39: Verse 6:

Translation: He creates you in the wombs of your mothers, in stages, one after another, in three veils of darkness.... (Ali, 2016)

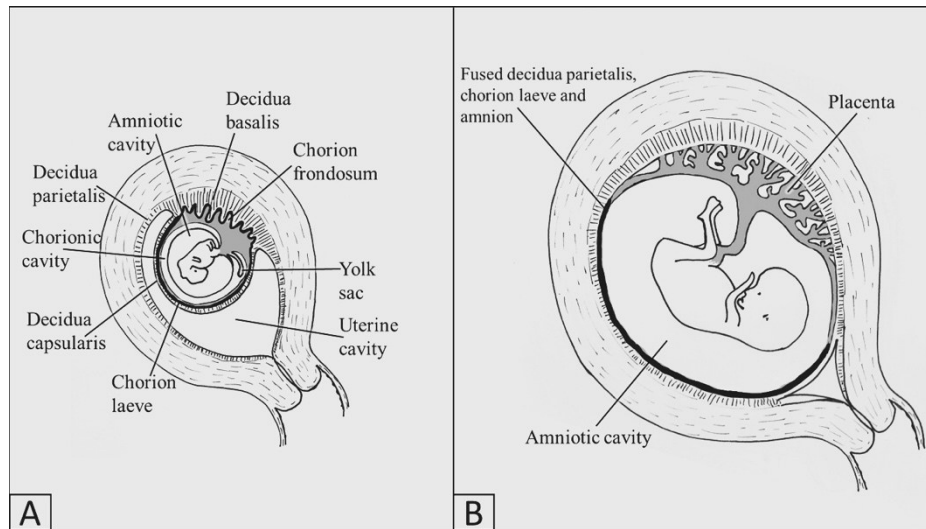


Figure 3. A) End of the second month. Note the uterine, chorionic and amniotic cavities. B) End of the third month of development. At this stage, the chorion and the amnion have fused, obliterating the uterine cavity due to fusion of the chorion leave and the decidua parietalis (Sadler, 2012; Moore et al., 2013).

The plausible interpretation of the three regions of darkness mentioned in Surah Al-Zumar aligns with the explanation provided by Hassanein (2015), which is the only reference sharing our opinion. Hassanein (2015) also observed that the Qur’ān was highly precise in describing the stages of creation passing through three dark zones: the cavity of the uterus, the cavity of the chorionic vesicle, and the amniotic cavity (Hassanein, 2015). These three zones only existed during the embryonic stages and disappeared after their completion.

The presence of various explanations of the verse highlights the extraordinary language of the Qur’ān, which aligns with scientifically validated modern embryological knowledge. Indeed, only Allah knows the precise meaning of every word in the Qur’ān, as stated in the Surah Al-An’ām verse 6: Verse 59.

Translation: He alone has the keys to the unseen treasures, which no one knows except Him. He knows whatever is in the land and the sea; there is not a single leaf that falls without His knowledge, there is neither a grain in the darkness of the earth nor anything fresh or dry which has not been recorded in a Clear Book.

CONCLUSION

The term “three veils of darkness” most likely refers to the uterine, chorionic, and amniotic cavities that develop simultaneously during the formation of the early embryo into a foetus within the uterus. The interpretations of the studied verse in Surah Al-Zumar by the authors were sincerely made to enrich existing interpretations by previous scholars. It is not the authors' intention to dismiss other opinions regarding this verse. Nevertheless, we should explore and properly understand this religious scripture to benefit human knowledge.

REFERENCES

- Ahmad, A. (2024) Ilm Al-Janin (Embryology): Insights from the Glorious Quran. Retrieved from https://www.researchgate.net/publication/380637241_Tibb_Nabawi_Prophetic_Medicine_Series_III_ILM_AL-JANIN_Embryology_Insights_from_the_Glorious_Quran#fullTextFileContent
- Aḥmad bin Muḥammad bin Ḥanbal, Musnad al-Imām Aḥmad bin Ḥanbal, ed. Shu‘ayb al-Arna‘ūt et al. (2001). *Beirut: Mu‘assasah al-Risālah* 3, 198.
- Ahmed, D. (2006). Islamic Perspective. The Qur’ān and human embryology: A Further Study. *Journal of the Islamic Medical Association of North America* 38: 98.
- Al-Azzam, B., Al-Ahaydib, M., and Rababah, H. A. (2015). The Reflection of Scientific Facts in the Translation of The Qur’ān. *International Journal of Language and Linguistics* 3, 193-202.
- Al-Bukhārī, Abū ‘Abd Allāh Muḥammad bin Ismā‘īl, al-Jāmi‘ al-Ṣaḥīḥ al-Musnad min Ḥadīth Rasūl Allāh SAW wa Sunanih wa Ayyāmih (Ṣaḥīḥ al-Bukhārī), ed. Muḥammad Zahir bin Nāṣir al-Nāṣir, (Mansurah: Dār al-Ṭūq al-Najāh, 1422H), 8, 122.
- al-Qurṭubī, Muḥammad bin Aḥmad. (n.d.). Al-Jāmi‘ li Aḥkām al-Qur’ān, (Kaherah: Al-Maktabah al-Tawfīqiyah
- al-Ṭabarī, Abū Ja‘far Muḥammad bin Jarīr. (1968). Jāmi‘ al-Bayān ‘an ta’wil al-Qur’ān. Miṣr: Sharikah Maktabah wa Tab‘ah Muṣṭafā al-Bābī al-Ḥalabī wa Awladuh.
- al-Zuhaylī, Wahbah. (1991). Al-Tafsīr al-Munīr fī al-‘Aqīdah wa al-Sharī‘ah wa al-Manhaj. Beirut: Dār al-Fikr al-Mu‘āṣir.
- Ali, A. Y. (2016). *The Holy Qur’ān: Original Arabic Text with English Translation and Selected Commentaries*, Saba Islamic Media Sdn. Bhd., 411.
- Amrullah, A. M. K. (2017). Tafsir Surah Az-Zumar dan Juzuk 24, PTS Publishing House Sdn. Bhd., 13.
- Ansari, Z. I. (2001). Scientific Exegesis of the Qur’ān. *Journal of Qur’ānic Studies* 3, 91-104.
- Anwar, O. and Ansar, F. (2018). Ibn al-Nafis. *International Journal of Pathology* 15, 203-205.
- Hassanein, G. H. (2015). Hyperfine Description of Human Creation in the Three Dark Zones in Quran. *QURANICA-International Journal of Quranic Research*, 7(2), 1-10.
- <https://.com/39/6-16?translations=20>
- <https://holyquran.site/#1:1>
- Ibn Hajar, Aḥmad bin ‘Alī bin Hajar al-‘Asqalānī, Faṭḥ al-Bārī Sharḥ Ṣaḥīḥ al-Bukhārī, ed. Muhammad Fu‘ād ‘Abd al-Bāqī, (Beirut: Dār al-Ma‘rifah, 1379H). Ibn Khattak, I.A., Ullah, N., and Din, Z. U. “Qur’ān, Human Embryology and Nutrition”, *Saudi Medical Journal* 27 (2006), 1603.

- Ibn Kathīr, Abū al-Fidā' Ismā'īl al-Qurashī, (e.d) Khalīd Muḥammad Maḥarram. (1999). Tafsir Al-Quran al-‘Aẓīm. Beirut: Maktabat al-‘Asriyyah.
- Ibn Manẓūr, Muḥammad ibn Mukarram, 1232-1311 or 1312. (1405/1984). Lisān al-‘Arab. Qum, Iran :Adab al-Ḥawzah,
- Lane, A. (2005). A Traditional Mu'tazilite Qur'ān Commentary: The Kashshāf of Jār Allāh al-Zamakhsharī, Brill, 538, 1144.
- Lings, M. and Barrett, S. (1983). Muhammad: His life based on the earliest sources, London, Islamic Texts Society, 34.
- Mahdi, E., Abolfazl, F. and Hamid, S. (2012). Developmental biology in Holy Qur'ān. *Journal of Physiology and Pathophysiology* 3, 1-7.
- Milton J. C. (1974). A Dictionary of Modern Written Arabic, Beirut: Librairie du Liban.
- Mir, A. H. (2019). Qur'ān and Science: A Study of The Compatibility of Qur'ānic Verses with Modern Scientific Theories. *al-Afkar, Journal for Islamic Studies* 2, 42-50.
- Mohamed, K. B. (1999). Creation after creation in three veils of darkness: The hidden biological wonders in al- Qur'ān. *Journal of the Islamic Medical Association of North America* 31.
- Mohsen, M., Esmailzadeh, M. and Hamid, S. (2011). Holy Qur'ān, New Sciences and Development of Human Embryo. *Webmed Central Embryology* 2, 1-9.
- Moore, K. L. (1982). Highlights of human embryology in the Koran and hadith in *Arabization and Medical Education. Proceedings from the Seventh Saudi Medical Conference, King Faisal University* May 3-6 1982; 51-58.
- Moore, K. L., Persaud, T. V. N., and Torchia, M. G. (2013). The Developing Human: Clinically Oriented Embryology, Saunders, an imprint of Elsevier Inc.
- Nasution, A. H. (2020). Embriologi Manusia Dalam Perspektif Al- Qur'ān. *Nizhamiyah*, 10.
- Rehman, J. (2003). Searching for Scientific Facts in the Qur'ān: Islamization of Knowledge or A New Form of Scientism? *Islam and Science* 1, 245.
- Saadat, S. (2009). Human Embryology and The Holy Qur'ān: An Overview. *International Journal of Health Sciences* 3, 103-9.
- Sadler, T. W. (2012). Langman's medical embryology. *Lippincott Williams and Wilkins, Philadelphia, PA, 12th edition*.
- Sayska, D. S. and Arni, J. (2016). Evidences of scientific miracle of Al-Qur'ān in the modern era. *Jurnal Ushuluddin* 24, 79-90.
- Shakir, M. H. (2014). Al-Qur'ān Al Kareem with English Translation, PDI Publications Sdn. Bhd., 459.

- Singer, P. N., and Rosen, R. M. (Eds.). (2024). *The Oxford Handbook of Galen*. Oxford University Press. doi:org/10.1093/oxfordhb/9780190913687.001.0001.
- Syed, I. B. (1987). Islamization of Attitude and Practise in Embryology in Islamization of Attitudes and Practices in Science and Technology: Proceedings of Workshop on Islamization of Attittudes [sic] and Practices in Science and Technology, Herndon, Virginia: February 27-March 1st 1987 AC (No. 9, p. 117).
- Syed, I. B. (2003). Attitude of a Muslim Scholar at Human Embryology”, JISHIM, 1.
- Surah Al-Zumar, 39: Verse 6, holy Qur’ān.
- Tzortzis, H. A. (2011a). Embryology in the Qur’ān: A Scientific-linguistic Analysis of Chapter 23; with Responses to Historical, Scientific and Popular Contentions, Universitäts-und Landesbibliothek Sachsen-Anhalt.
- Tzortzis (2011b). Did the Prophet Muhammad Plagiarise Ancient Greek Embryology? Retrieved from <https://www.hamzatzortzis.com/did-the-prophet-muhammad-plagiarise-hellenic-embryology/>
- Yahya, H. (1994). *Miracles of the Qur’ān*, Al-Attique Publishers Inc. Canada, 271, 78.
- Zaheer, N. (2016). Human Embryo’s Developmental Stages of Fertilization, Implantation and ‘Alaqah (A comparative study of Islam and embryology). *Peshawar Islamicus* 7, 9-16