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HISTORY AND ANATOMY OF CESAREAN SECTION

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Abstract

Cesarean section is the delivery process that allows the babies who cannot be born vaginally by opening the abdominal wall and uterus. During the incision in the abdomen to reach the uterus, many layers are intervened. Cesarean section is widely used today. The first record of cesarean section in history goes back to 2000 BC. Numerous techniques have been used for Cesarean section surgery, with the discovery of human anatomy and the development of surgical and anesthesia techniques, it has reached today's standards. Because the site is anatomically complicated, it is important for clinicians to know the history of the surgery and the anatomical structure of the region. Our aim is to examine the history and anatomical development of this widely used cesarean section.

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Keywords:

Cesarean, Anatomy, History of medicine, Nursing, Birth

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Introduction

Cesarean delivery is the surgical removal of the fetus through the uterus when the mother and fetus are at risk for morbidity and mortality (Gungor & Oskay, 2015). While caesarean section was initially used to save the life of the expectant mother, it was performed as a low-risk operation that would later save the baby's life. However, today, apart from medical necessity, it is applied as a surgical procedure that edi the mother wants and facilitates the work of the physician (Demirgoz & Dereli, 2017).

The “ideal cesarean section (C / S) ratio, which has been targeted by the World Health Organization (WHO) since 1985, is between 10-15% (WHO, 2015). The countries with the highest cesarean section rates are; China, Brazil, Turkey, Mexico and Italy, while the ratio in the Netherlands, Belgium, Norway, is very low in developed countries such as Finland (Sayın et al., 2018).

The frequency of cesarean births in recent years, according to Turkey Demographic Health Survey data has increased significantly. The caesarean section rate, which was approximately 7% in 1993, almost doubled after 5 years. In the 1998 data, the cesarean delivery rate was reported as 13.9%, 21.2% in 2003, 36.7% in 2008 and 48.0% in 2013 (TNSA, 2013). Republic of Turkey Ministry of Health data for 2015 are 99% of births took place in health facilities, the C / S births 53.1%, primary C / S of the share of all births were reported while as 27.2%. It was stated that 37.5% of C / S deliveries were performed in Ministry of Health, 69.3% in university hospitals and 70.5% in private hospitals (Ministry of Health, 2015).

Cesarean delivery is preferred because of fetal distress, presentation anomalies, multiple pregnancies, fetal anomalies, previous uterine surgery, systemic diseases, vertical maternal infections, indications for labor or delivery. The desire of the mother should not be a reason alone for caesarean section and should be considered when there is a psychological condition such as excessive fear, anxiety and panic of the person (Gungor & Oskay, 2015).

Among the reasons for the rapid increase in the rate of cesarean delivery, technical advances in terms of operation technique and anesthesia, mortality and morbidity in the mother and the baby are believed to be less, physicians can determine the timing of the delivery and the duration of the delivery, pregnant women preferred to use cesarean delivery. In order to avoid malpractice cases in case of intervened labor, increasing risky pregnancies and advanced age pregnancies can be considered (Bal et al., 2013).

In a study conducted by Oner and Kocas (2016) with 523 women who had delivered at least once in a community health center, 27% were voluntarily, 13.5% due to presentation anomaly and 11.7% due to presentation anomaly. because of previous C / S, 9.1% due to non-progressive labor, 7.3% due to fetal distress, 4.4% due to placental anomalies, 2.9% due to multiple pregnancy reported that they are with (Oner & Kocas, 2016). In a study conducted by Cakmak et al. (2014) in a university hospital with 500 women, the reasons for preference were asked to women who stated that they would prefer optional cesarean delivery; 42.2% stated that they were afraid of vaginal delivery, 31.6% stated that the cesarean section was painless, 15.8% stated that the mother and the baby suffered less harm in the cesarean section and 10.5% thought that vaginal delivery was more risky (Cakmak et al. 2014). Zhang et al. (2010)

reported a cesarean delivery rate of 30.5% in a study conducted with 228,668 women in 19 hospitals in the USA. The most frequent indication for cesarean deliveries was due to dystocia with 47.1% (Zhang et al., 2010).

Our aim is to examine the history and anatomical development of this widely used cesarean section.

Cesarean section from past to present

It is known that cesarean operation is as old as human history. According to the law of "Lex Regia" in ancient Rome; it was forbidden to bury the baby of the dead pregnant woman without being removed from the uterus, and this law was later called "Lex Ceaserea". Records of the birth of a live baby were found in Sicily in 508 BC when this law was applied (Komurcu & Gencalp, 2002).

Caesarean section has been a part of human culture since ancient times, and information about caesarean section dates back to ancient Hindu, Egyptian, Roman and Greek folklore. According to Greek mythology, Apollo removed Asclepius, the founder of the famous religious medicine, from his mother's womb (Figure 1) (Sewell, 1993). There is also controversial information that the name Caesarean section was used because Julius Caesar was born with this method. The Romans called caesarean section “a caeso matrix utero”, which means until the last century BC “to cut the belly of the dead mother”. Historian Pliny the Elder (A.D. 23–79) called this action “caesones” to indicate the importance of non-vaginal delivery (Turamanlar & Songur, 2014).

Figure 1. Asclepius' Father Apollo removed from his mother's uterus

Caesarean section was only used to save the unborn baby when the mother died or was thought to die. Cesarean section was performed as a last resort and it was not considered to protect the mother's life during the operation (Sewell 1993). Although the Middle Ages was largely seen as a recession period in science and medicine, caesarean section was seen as an effort to save the lives of women during this period (Komurcu & Gencalp, 2002). The first written record of the mother and the baby after the caesarean section was the operation of Jacob Nufer's wife in 1500 in Switzerland. Nufer's wife could not have been born despite the help of thirteen midwives. Her desperate husband received permission from the local authorities for cesarean section and rescued the mother and baby alive after cesarean section. (Komurcu & Gencalp, 2002; Turamanlar & Songur, 2014).

Leonardo da Vinci, who lived in the 16th century, has drawings of the situation of the pregnant woman and the child in the uterus, which have greatly contributed to the development of caesarean section (Figure 2) (Turamanlar & Songur 2014). Andreas Vesalius, known as the founder of modern anatomy, published Corpor De Corporis Humani Fabrica 15 in 1543, which can be considered a turning point in this subject and shows the anatomy and abdominal structures of women (Figure 3). This work provided a theoretical basis for surgeons for cesarean delivery in the 17th and 19th centuries (Sewell, 1993).

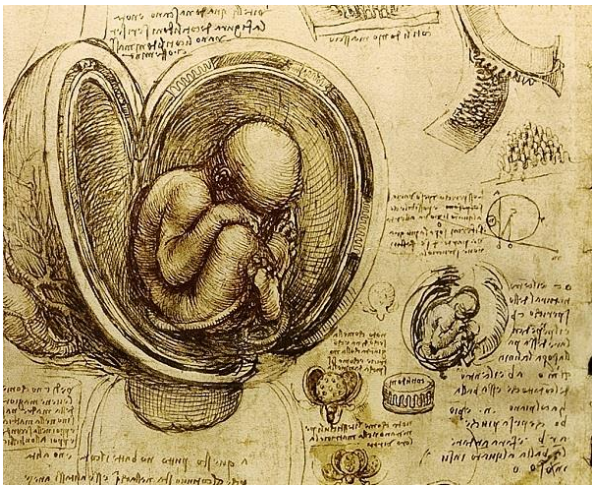

Figure 2. Drawings of Leonardo Da Vinci on the Situation of the Pregnant Woman and the Child in Uterus

Figure 3. Anatomy of the Female Pelvis from Andreas Vesalius (De Corporis Humani Fabrica)

A British traveler named R .W Felkin (1879) witnessed a cesarean operation in Uganda. In this operation, banana wine was used as a disinfectant by analgesic and wiping the abdomen. They used a paste from the plant roots on the wound and applied a bandage with a tight cloth after surgery. Felkin observed the patient after caesarean section and stated that it became operational in the field after 11 days (Komurcu & Gencalp, 2002; Lurie & Glezerman, 2003).

In the 18th and 19th centuries, knowledge of anatomy increased significantly. However, the first successful cesarean section operations that have proven the survival of the mother and the baby have started to be described. Throughout history, as the subtleties of human anatomy are explored, as in all surgical techniques, the technique of caesarean section surgeries has developed and has reached to today's standards with the developments in anesthesia (Turamanlar & Songur, 2014).

Anatomy of cesarean section

Abdomen is the part of the body between the thorax and the pelvis. Cavitas abdominis closes the space called front and side (Ozan, 2004). Abdomen is home to important organs of the digestive and excretory system. Some abdominal organs may extend beyond the abdominal boundaries and extend into the pelvic cavity as well as enlarged pelvis organs extending upwards into the abdomen (Gilroy, 2015).

Nowadays, the most commonly performed abdominal surgery is caesarean section (Taffel et al., 1991). During the incision, the uterus is reached using different techniques. During this incision, we will try to explain which layers are treated from superficial to deep (Figure 4).

1. Skin: The largest organ of the body, the skin is the most superficial layer in this region (Ozan, 2004).
2. Fascia superficialis: It is a layer of loose connective tissue located just under the skin. It has two layers on the front and side walls of the abdomen (Camper's fascia and scarpa's fascia) (Moore & Agur, 2015).
3. Fascia profunda: It is a very thin layer and wraps m.obliquus externus abdominis (Moore & Agur, 2015).
4. The fascia of m.obliquus externus abdominis
5. Aponeurosis of m.obliquus externus abdominis
6. Ligamentum inguinale: Aponeurosis of M.obliquus externus abdominis occurs when the spina iliaca thickens between the anterior superior and the tuberculum pubicum (Gokmen, 2008).
7. Ligamentum lacunare: Lig. inguinale'in the inner end of the fibers separated from the back and out of the pecten ossis is the bond formed by the pubis'e (Gokmen, 2008).
8. Annulus inguinalis superficialis: It is the slit-shaped opening formed by the fibers of m.obliquus externus abdominis on the upper-outer side of the tuberculum pubicum (Moore & Agur, 2015).
9. The fascia of M.obliquus internus abdominis
10. Fibers of M.obliquus internus abdominis
11. Tendo conjunctivus: M. obliquus internus abdominis and m.transversus abdominis aponeuroses combine to form this structure and attach to the pubis (Gilroy, 2015).
12. Ligament of Hen: The outward extension of the lateral edge of M.rectus abdominis, m. together with aponeurosis of the transversus abdominis and fascia transversalis, it forms this ligament (Ozan, 2004).
13. Fascia transversalis: It is a deep fascia covering the posterior face of M. transversus abdominis (Ozan, 2004).
14. Extraperitoneal tissue
15. Peritoneum parietale

16. Cavitas peritoenalis
17. Peritoneum viscerale
18. Uterus

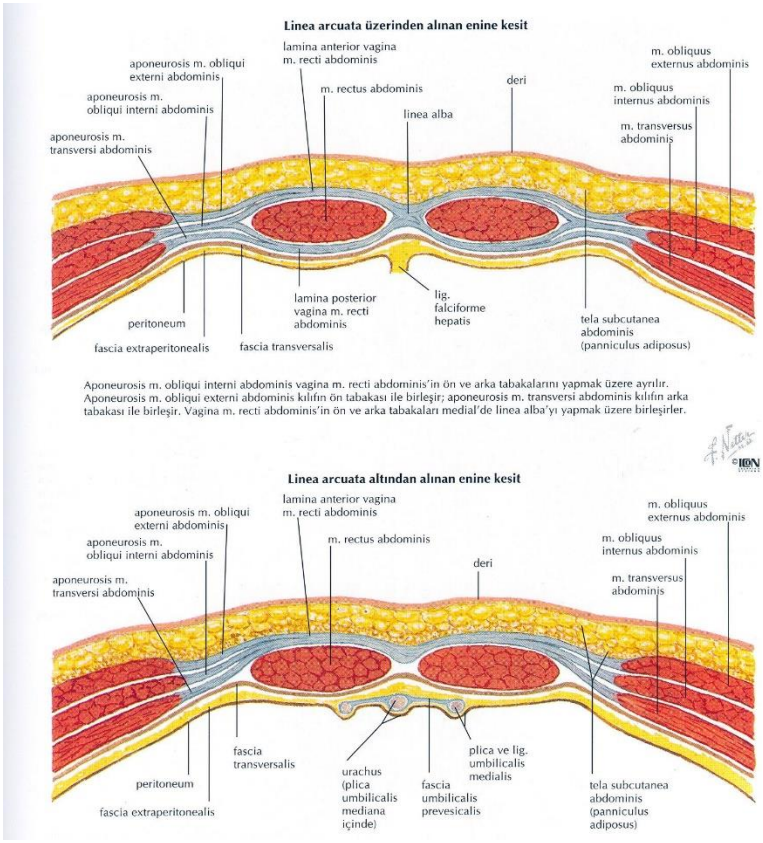

Figure 4. Front and Side of Abdomen

We think that knowing the anatomical structure of this region will facilitate the work of health professionals who are interested in the region and also reduce possible complications.

Complications of cesarean section

Caesarean delivery, which was performed only in mandatory cases in the early times, became applicable by the mother's own will over time and began to be applied as an alternative to normal birth. The American Gynecologists Association stated that caesarean section is a surgical procedure, it should be done due to medical reasons and vaginal delivery is definitely not an alternative (ACOG, 2003). For this reason, cesarean delivery is a surgical procedure and when planning a cesarean section, the benefits and risks specific to pregnancy, pregnancy and baby should be considered (ACOG, 2003).

It is stated that the risk of maternal morbidity and mortality is 4-7 times higher than that of normal births. When we look at the problems; bleeding, infection, neighboring organ injuries, thromboembolic conditions and anesthesia-related complications are the most frequently mentioned problems (Sahin, 2009). When we look at the maternal complications of cesarean delivery due to the mother's desire; risks such as increased risk of bleeding (hemorrhage), longer hospitalization, maternal recovery, increased risk of infection, placental problems in subsequent pregnancies, prolonged postpartum pain, impaired mother and infant communication, and decreased breastfeeding, urinary incontinence ratio can be seen (Bal et

al., 2013). The American Society of Obstetrics and Gynecology (ACOG) stated that the duration of hospital stay of the mother increased after optional cesarean delivery, uterine rupture, placental anomalies and obstetric complications increased in subsequent pregnancies (ACOG, 2013).

The American Society of Obstetrics and Gynecology (ACOG) stated that in terms of neonatal outcomes, problems such as hypothermia, hypoglycemia, respiratory distress syndrome, respiratory failure and hospitalization in neonatal intensive care unit increase in infants born with optional cesarean section (ACOG, 2013).

Result

According to WHO data, caesarean section rates have increased over time in almost all countries of the world and have exceeded the recommended rate of 10-15% by WHO. This increase in our country in recent years is quite remarkable.

Studies on cesarean section emphasize that this type of operative delivery should be preferred in the presence of a condition that threatens the health of both mother and baby and draws attention to the increasing rate of cesarean delivery throughout the world. Risks in cesarean delivery are higher than vaginal delivery. In the light of all this information, the necessity of encouraging normal birth by decreasing cesarean delivery rates is an undeniable necessity both in terms of maternal and fetal mortality and morbidity and in terms of material burden for our country.

Compilation studies about cesarean section are rare in the literature. In this study, which we talked about the historical development and anatomy of cesarean section, we think that it will be useful for clinicians working in the field of Obstetrics and Gynecology.

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