

HEAD PUSHING VERSUS REVERSE BREECH EXTRACTION FOR DELIVERY OF IMPACTED FETAL HEAD DURING CAESAREAN SECTIONAlshikha Haya Ahmad Diab^{*1}, Sahar Hassan², Ahmad Ali Abdulrahman³ and Jihad Mostafa Alayoub⁴^{1,2,3,4}Department of Obstetrics and Gynecology, Tishreen University, Lattakia, Syria.***Corresponding Author: Dr. Alshikha Haya Ahmad Diab**

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Article Received on 24/05/2024

Article Revised on 14/06/2024

Article Accepted on 05/07/2024

ABSTRACT

The cesarean rate in developed countries has reached 31.1%, extracting the impacted head during cesarean section poses a major challenge to obstetricians in the presence of an overlap Bones of the head and edema, in addition to the fact that the lower part of the uterus is greatly stretched and thinned, so such cases are usually accompanied by many maternal complications, including: extension of the uterine fissure, increased incidence of bleeding and the need for blood transfusion, prolonged surgical period, increased risk of infections after surgery, urinary tract injuries such as the injury of the bladder. The study sample include 60 full-term pregnant postpartum patients admitted to the labor department between 2023 and 2024 who met the criteria for inclusion in the study and agreed to enter it after explaining its purpose and method. The results showed that 30 patients were accepted for each of the two study groups who met the entry criteria (30 patients for the transvaginal push group and 30 patients for the reverse breech extraction group). The incidence of extension of the uterine incision was higher in the transvaginal thrust group, where the difference was statistically significant, $p < 0.05$, in addition to the incidence of urinary complications during surgery at a higher rate in the transvaginal head thrust group, with a statistical difference of < 0.05 , p . No significant differences were observed between the two groups in terms of surgical time, bleeding, and postoperative infections, as the differences were not statistically significant between the two groups, $p \geq 0.05$.

KEYWORDS: Second stage of labor, reserve breech extraction, head-pushing method, cesarean section, impacted fetal head.

1. INTRODUCTION

Caesarean section is one of the most common surgical procedures in the world, and it is a vital technique for maintaining the health of the mother and baby. However, there are many techniques and methods used during the procedure, which may change based on individual circumstances.^[1,2]

The fetus can be extracted during the operation in two different ways in the case of impacted fetal head, one of which is pushing the head out of the vagina.^[3] This method is used when the vagina is able to expand enough to allow the fetus to be pushed through it, where the fetus is presented with its head first, and is gently pushed from Before the doctor to complete the delivery process, this method is considered common and effective in cases of traditional cesarean section.^[4,5] The second method is to extract the opposite breech.^[6] This method is used when the fetus is in a breech position, that is, the lower part of the body or the breech is the first part to emerge. Special techniques are used to gently and precisely extract the contralateral seat to ensure the safety of the baby and mother.^[7,8]

Comparing these two methods and providing a comprehensive overview of each, including the benefits and risks associated with them, as well as the circumstances that may make each the optimal choice, enables parents and patients to make informed decisions about perinatal health care.^[9,10]

2. MATERIALS AND METHODS**2.1. Study Design**

The study is designed as a prospective randomized controlled trial. The study was conducted in the Department of Obstetrics and Gynecology at Tishreen University Hospital in the city of Lattakia, between 2023 and 2024.

The women's ages ranged from 25 to 40 years, with an average of 28.9 ± 3.1 years.

The total number of samples studied included 60 samples, which included 30 samples for each of the two study groups that met the following entry criteria: 30 women for the transvaginal thrust group, and 30 women for the counter seat extraction group.

Entry criteria included: consent of the pregnant woman to enter the study, single impacted fetal head at full term (37-42) weeks gestation, no history of uterine surgery, cervical dilatation greater than or equal to 7 and impacted fetal head at level 0 or greater.

Exclusion criteria included: the woman's refusal to participate in the study, premature rupture of the membranes, amniotic fluid infection, uterine fibroids, thrombotic bleeding disorders, and the presence of systemic diseases that may increase the rate of infection (diabetes or immunodeficiency diseases).

After including the women in the study sample who fulfilled its conditions, the attached questionnaire form was filled out after obtaining informed consent. The study participants were divided into the two groups in a random manner in a 1:1 ratio using even and odd numbers. All the variables studied were recorded according to the study, as the variables will be studied. As follows: 1- Surgical time: It will be calculated from the time of incision in the skin until the end of the operation by suturing all of the skin Abdominal layers. 2- The occurrence of an extension of the uterine incision: This occurs by expanding the initial incision towards the bottom, side or top, or changing the shape of the initial uterine incision made by the surgeon. 3- Estimating the amount of bleeding: This is done by comparing hemoglobin and hematocrit numbers before and after surgery as an indicator for estimating bleeding, in addition to recording the need for a blood transfusion during or after surgery. 4- Recording urinary complications if they occur, such as bladder trauma. 5- Postoperative infections: The presence of endometrial infection or cesarean wound infection will be detected by examining the patient on the eighth day when she visits the gynecological clinic to remove the stitches and looking for signs of infection such as fever, foul-smelling lochia, or uterine tenderness, and informing her. Refer to the hospital immediately if any of these symptoms occur before the time of removing the stitches.

2.2. Statistical Study

The results are considered statistically significant if the p-value < 0.05.

The program (IBM SPSS statisticsVersion25) was adopted to calculate statistical coefficients and analyze the results.

2.2.1. Description Statistical

It includes quantitative variables with measures of central tendency and measures of dispersion, and qualitative variables with frequencies and percentages.

2.2.2. Inferential Statistical

Relying on the laws of statistics, which is the Chi-Square test, to study the relationship between qualitative variables. Independent Student T test to compare means between two groups Independent.

3. RESULTS AND DISCUSSION

The results of the research showed that it included 60 full-term pregnant women who were admitted to the division Labor - Department of Obstetrics and Gynecology at Tishreen University Hospital in Latakia, during the time period 2023-2024 and the investigators met the inclusion criteria in the research, that 41.7% of the studied research sample was within the age group of 25-30 years, 45% within the age group of 30-35 years, and 13.3% within the age group of 35-40 years. As shown in (Figure 1).

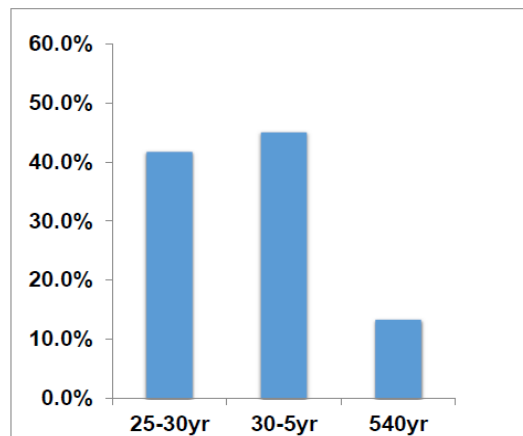


Fig. 1: Distribution of samples according to age groups.

Also, 23.3% of the total samples were in the 37-38weeks pregnancy category, 46.7% in the 8-39weeks category, and 30% in the more than 39weeks category. As shown in (Figure 2).

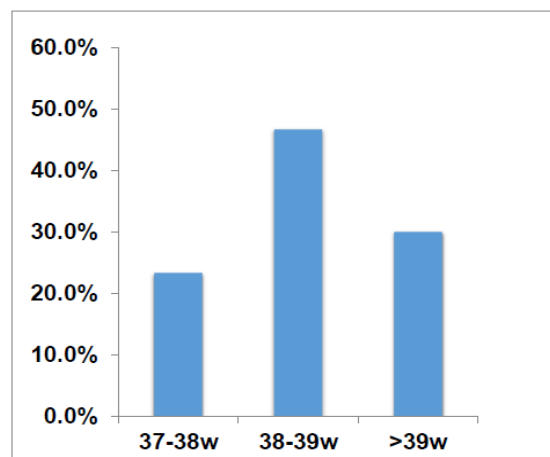


Fig. 2: Distribution of samples according to pregnancy categories.

The fetus was extracted in 30 of the samples studied by the vaginal push method, and in 30 other samples by the reverse seat extraction method. The results showed that there were no statistically significant differences between the two research groups with regard to age groups, shown in Table 1.

Table 1: Distribution according to age groups.

Head Pushing	Reverse Breech Extraction	Age groups (years)	p-value
12 (40%)	13 (43.3%)	25-30	0.6
13 (43.3%)	14 (46.7%)	30-35	
5 (16.7%)	3 (10%)	35-40	

Also, the results showed that there were no statistically significant differences between the two research groups with regard to pregnancy age categories, shown in Table 2.

Table 2: Distribution according to pregnancy age categories.

Head Pushing	Reverse Breech Extraction	pregnancy categories (weeks)	p-value
8 (26.7%)	6 (20%)	37-38	0.08
15 (30%)	13 (43.3%)	38-39	
7 (23.3%)	11 (36.7%)	>39	

There were no statistically significant differences between the two research groups with regard to the average values of newborn weight (gr), as the values in the vaginal pushing method were (3159.2±432.1), and in the contralateral seat extraction method were (2989.2±334.3), and p= (0.06).

extraction using the vaginal pushing method, which reached (49.82±4.1), while the reverse seat method (46.54±2.4), p= (0.09).

There were no statistically significant differences between the two research groups with regard to the average values regarding the duration of the surgical procedure, but it was longer in the group of fetal

There were statistically significant differences between the two research groups regarding the incidence of extension of the uterine incision, which was higher in the vaginal push group by 43.3% compared to 13.3% in the contralateral seat extraction group, as shown in the Table 3.

Table 3: Distribution according to Extension of the uterine fissure.

Head Pushing	Reverse Breech Extraction	Extension of the uterine fissure	p-value
13 (43.3%)	4 (13.3%)	Yes	0.002
17 (56.7%)	26 (86.7%)	No	

There were no statistically significant differences between the two research groups regarding the average values of hemoglobin, whether before or after cesarean

section, as well as in the amount of change that occurred. As shown in Table 4.

Table 4: Distribution according to the average values of hemoglobin.

Head Pushing	Reverse Breech Extraction	Hemoglobin (g/dl)	p-value
11.39±0.8	11.63±0.6	Before cesarean section	0.06
10.49±0.3	10.53±0.5	After cesarean section	0.09
-0.91±0.5	-0.72±0.2	The amount of change	0.2

There were no statistically significant differences between the two research groups with regard to the average values of hematocrit, whether before or after

cesarean section, as well as in the amount of change that occurred. As shown in Table 5.

Table 5: Distribution according to the average values of hematocrit.

Head Pushing	Reverse Breech Extraction	Hematocrit (%)	p-value
35.90±3.6	37.50±3.2	Before caesarean section	0.08
33.95±2.8	35.86±2.1	After caesarean section	0.09
-1.95±0.3	-1.64±1.12	The amount of change	0.2

There was a need for blood transfusion in the vaginal pushing group only in one case, 3.3% of its cases.

urinary complications, which were higher in the vaginal pushing group by 10%, which was one case that had a tear in the posterior bladder wall and two cases of urinary tract hemorrhage without overt urinary injury, compared to 3.3%. In the opposite seat extraction group.

There were statistically significant differences between the two research groups with regard to the incidence of

Therefore, the results showed the values respectively in the case of vaginal thrusting 3(10%), 27(90%), while the values were in the opposite seat case 1(3.3%), 29(96.7%), and $p= (0.02)$.

On the other hand, for infections following surgery, there were no statistically significant differences, but the values were higher in the vaginal pushing group, as cesarean incision infection occurred in 10% of this group, compared to 6.7% in the reverse seat extraction group. Endometrial infection occurred only in the first group, with a rate of 3.3%. The values in the case of a cesarean section for pushing from the vagina and the opposite seat were, respectively 3(10%), 2(6.7%), and $p= (0.06)$. While the values in the case of the endometrium were, respectively 1(3.3%), 0(0%), and $p= (0.08)$.

The above findings (higher frequency of morbidity in the vaginal pushing group) can be explained by simultaneous transabdominal maneuvers used to remove the intervening head in the pelvis. Inadvertent application of pressure on the lower segment of the uterus or the uterine angles during removal of cephalo-abdominal impaction leads to rupture of the angles and /or ligaments towards the broad ligament, neck and vagina. Lateral extensions lead to damage to the uterine arteries and venous plexuses, while the cervical arteries and vaginal venous plexuses may become damaged by inferior vertical extension, which leads to an increased risk of bleeding, infection, and prolonged surgical time.

4. CONCLUSION

The current study of a number of full-term women with impacted fetal head during caesarean section showed that, Vaginal pushing was associated with a statistically significant increase in both the incidence of uterine fissure extension and urinary injury. Also, Vaginal pushing was associated with longer surgical time, higher change in haemoglobin rate, need for blood transfusion, and postoperative infections, but without statistical significance.

These results showed the preference for fetal extraction in Impacted Fetal Head during caesarean section by the contralateral breech extraction method, due to the less associated morbidity and thus improving the final outcome for both the mother and fetus and reducing the associated health care costs.

Conflicts of Interest

“The authors declare that there is no conflict of interest regarding the publication of this paper.”

Funding Statement

The research was funded by Tishreen University.

ACKNOWLEDGMENTS

A We extend our thanks to Tishreen University Hospital - Labor Division - Department of Obstetrics and Gynecology for helping to complete the research and

providing all necessary assistance.

The work was carried out mainly by Author^[1], with follow-up from the rest of the researchers^[2,3,4], general supervision of the research, and assistance in interpreting the results.

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