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Implementation of the first skin-to-skin contact after cesarean sections in maternity hospitals in Warsaw

Realizacja pierwszego kontaktu "skóra do skóry" po cięciach cesarskich w warszawskich placówkach położniczych

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STRESZCZENIE

REALIZACJA PIERWSZEGO KONTAKTU „SKÓRA DO SKÓRY" PO CIĘCIACH CESARSKICH W WARSZAWSKICH PLACÓWKACH POŁOŻNICZYCH

Cel pracy. Celem pracy była ocena zapewnienia kontaktu „skóra do skóry" po cięciach cesarskich w warszawskich placówkach położniczych.

Materiał i metoda. W badaniu wykorzystano metodę obserwacji bezpośredniej. Materiał do badań gromadzony był za pomocą autorskiego arkusza obserwacji skonstruowanego na potrzeby badania. Badania przeprowadzono w 11 warszawskich placówkach położniczych o różnym stopniu referencyjności.

Wyniki. W 11,73% przypadków po cięciach cesarskich kontakt matki z dzieckiem nastąpił bezpośrednio po urodzeniu. Czas trwania pierwszego kontaktu był różny i wynosił: kilka sekund – 30,10% obserwacji, od 1 do 5 minut – 32,14%, od 6 do 15 minut – 16,84%. Najdłuższy kontakt trwał 16-30 minut, i realizowano go tylko w 6,12% przypadków.

Wnioski. W większości przypadków rozpoczęcie kontaktu matki z dzieckiem po cięciu cesarskim nie jest realizowane zgodnie z zaleceniami, dotyczy to momentu jego rozpoczęcia, czasu trwania oraz formy.

Słowa kluczowe: cięcie cesarskie, kontakt „skóra do skóry", noworodek

ABSTRACT

IMPLEMENTATION OF THE FIRST SKIN-TO-SKIN CONTACT AFTER CESAREAN SECTIONS IN MATERNITY HOSPITALS IN WARSAW

Aim. The aim of the study was to assess the skin-to-skin contact after Caesarean sections in Warsaw maternity hospitals.

Material and methods. The study used the method of direct observation. The material for the research was collected using the original observation sheet designed for the purpose of the study. The research was carried out in 11 maternity facilities in Warsaw of varied referral levels.

Results. In 11.73% of cases after Caesarean sections, the mother's contact with the child occurred immediately after birth. The duration of the first contact varied and amounted to: a few seconds – 30.10% of observations, from 1 to 5 minutes – 32.14%, from 6 to 15 minutes – 16.84%. The longest contact lasted 16-30 minutes, and it was performed only in 6.12% of cases.

Conclusions. In most cases, the initiation of mother-child contact after Caesarean section is not carried out in line with the recommendations, it terms of its initiation, duration and form.

Key words: caesarean section, skin-to-skin contact, newborn

INTRODUCTION

Skin-to-skin contact is a method to ease newborn's adaptation to extrauterine life. In specific circumstances, like Caesarean section, it may be executed in different ways than after physiological delivery.

In the case of Caesarean section under general anaesthesia skin-to-skin contact should be initiated as soon as possible (optimum is before 2 hours post-delivery). The mother should be capable of maintaining conscious contact with her infant. In the event of Caesarean sections under regional anaesthesia, skin-to-skin contact should be initiated in the operating room and continued in recovery room until the first feeding is completed, for not less than one hour. In both events, the technique should be no different than after natural delivery. Particular attention should be paid to infant's positioning in relation to mother's wound, which should not be pressed on. Father's presence in the operating room during Caesarean sections steadily becomes more common, allowing the skin-to--skin to be executed by them. Some facilities do now allow skin-to-skin due to inadequate room conditions. If there is no room for the father to execute skin-to-skin contact, area outside of the operating room should be offered. If the mother is not accompanied by a partner and the skin--to-skin contact was discontinued early, infant delivered in good condition should be clothed and placed in a cot within mother's sight. After transferring mother to recovery room, skin-to-skin contact should be reinstated, naked infant placed on mother's chest, carefully covered and secured. Then, skin-to-skin should be continued until the first feeding is completed or longer, as long as mother and infant are willing to [1].

Providing skin-to-skin contact within the first two hours of life is important because of:

- mutual synchronisation of mother and infant's body heat - when infant's temperature lowers, mother's rises [2],
- beneficial effect on neurobehavioural processes - infants stay calm, cry less, fall asleep more easily [3],
- infant's skin being colonised with mother's microbial flora [4],
- higher blood glucose level in the first hours of newborn's life [5],
- increasing duration and enhancing exclusive breastfeeding [6],
- less frequent admission to neonatal intensive care unit for infants born in good condition via Caesarean section [7],
- decreasing mother's anxiety levels concerning infant's well-being in case of Caesarean section [8].

AIM

This paper aimed to assess implementation of skin-to--skin contact after Caesarean sections in maternity facilities in the light of the WHO guidelines on mother-infant first contact.

MATERIALS AND METHODS

For this study, direct observation was performed. Research material was collected using original observation survey, specifically designed for this study.

The Bioethics Committee declared the 'Implementation of the first-skin-to-skin contact after Caesarean sections in maternity hospitals' not to be a medical experiment pursuant to Article 21 sec. 1 of the Medical Profession Act of December 5, 1996 (2018 Journal of Laws, item 617), and not to require approval from the Medical University Bioethics Committee.

The study was conducted in 11 obstetric facilities of varied referral levels, administration whereof approved the research to be performed.

A total number of 196 observations were analysed. Number of observations per facility was determined proportionally based on yearly delivery figures. Observations were launched at delivery and continued until the end of fourth period of labour.

RESULTS

The study was conducted in facilities of varied referral level. A total number of 196 observations of Caesarean section delivery were analysed. The shortest gestation at delivery was 35 weeks, the longest 41 weeks (mean 38.78 ± 1.31).

In the study group, 92.86% (N-182) were mature, healthy infants, while 7.14% (N-14) were premature infants in overall good condition.

The first minute Apgar score was 10 for 72.45% of infants, 9 for 18.37% and 8 for 9.18%. Similar scores were recorded in the fifth minute of life.

Mother-infant first contact

In the analysis of the gathered material, it was determined that mother-infant first contact was immediately after delivery in 11.73% of cases, after preliminary assessment of general condition at the resuscitation-procedure station in 51.53%, after mother's transfer to recovery in 21.94%, and after 2 or more hours in 14.80% (Tab.1).

Tab. 1. Mother-infant first contact initiation

	n	%
Immediately after delivery	23	11.73
After preliminary assessment of general condition	101	51.53
After mother's transfer to recovery	43	21.94
2 hours or more after delivery	29	14.80

On basis of the analysis of the manner of the first contact provision, it was determined that 28.57% of infants were placed on mother's chest naked, covered with blanket. When it comes to 14.80% of infants, they were dressed before being placed on mother's chest, 40.82% were placed cheek-to-cheek, and 1.01% were only kissed by mother. When it comes to 14.80% of infants, they were given skin--to-skin contact 2 or more hours after delivery, hence the manner of the contact was not registered as in this study

observations were only performed for the first 2 hours (Tab. 2).

Tab. 2. Mother-infant first contact characteristics

	n	%
Infant on mother's chest naked, covered with blanket	56	28.57
Infant on mother's chest, dressed	29	14.80
Cheek-to-cheek only	80	40.82
Infant kissed by mother	2	1.01
Not applicable	29	14.80

In terms of duration, mother-infant first contact was a few seconds in 30.10% of observations, 1-5 minutes in 32.14%, 6-15 minutes in 16.84%. The longest contact of 16-30 minutes was in 6.12% of cases. In 14.80% of deliveries, contact duration was not registered as it was performed 2 hours or later after birth (Tab. 3).

Tab. 3. Mother-infant first contact duration

	n	%
A few seconds	59	30.10
1-5 minutes	63	32.14
6-15 minutes	33	16.84
16-30 minutes	12	6.12
31-45 minutes	0	0.00
46-60 minutes	0	0.00
More than 60 minutes	0	0.00
Not applicable	29	14.80

On the basis of the analysis of the relationship between first contact starting time and its duration, it was determined that the skin-to-skin initiated immediately after delivery lasted a few seconds (8.67% of cases). If the contact was initiated after preliminary assessment of general condition, it usually lasted from 1 to 5 minutes (23.48%) or a few seconds (19.39%). After mother's transfer to recovery, the contact lasted 16-30 minutes in 5.10% of cases and 6-15 minutes in 8.15% (Tab. 4).

Tab. 4. First contact initiation time in relation to its duration

First contact initiation time	A few seconds		1-5 minutes		6-15 minutes		16-30 minutes		Not applicable	
	n	%	n	%	n	%	n	%	n	%
Immediately after delivery	17	8.67	4	2.04	2	1.02	0	0.00	0	0.00
After preliminary assessment of general condition	38	19.39	46	23.48	15	7.65	2	1.02	0	0.00
After mother's transfer to recovery	4	2.04	13	6.63	16	8.16	10	5.10	0	0.00
2 hours or more after delivery	0	0.00	0	0.00	0	0.00	0	0.00	29	14.80

After delivery, while mother was still in the operating room (until approximately 30 minutes post-delivery), 5.61% of infants were placed on mother's chest, 42.86% in a cot under father's care, 12.25% at the resuscitation-procedure station, 20.41% in the neonatology unit, 11.22% in a cot next to their mothers or next to procedure station, and 7.65% were hand-held by their fathers (Tab. 5).

Tab. 5. Infant's placement during mother's stay in the operating room, until approximately 30 minutes post-delivery

	n	%
On mother's chest	11	5.61
In a cot under father's care	84	42.86
At the resuscitation-procedure station	24	12.25
Neonatology unit	40	20.41
In a cot next to their mother in the operating room/in a cot next to procedure station	22	11.22
In father's arms	15	7.65

After surgery, infants were usually in the recovery room next to their mothers (46.43%), in neonatology unit (27.05%), in obstetrics unit (6.63%) and in hospital hallway (19.89%) (Tab. 6).

Tab. 6. Infant's placement in the first 2 hours of life

	n	%
Next to mother in the operating room	91	46.43
Neonatology unit	53	27.05
Obstetrics unit	13	6.63
Hospital hallway	39	19.89

It was determined that the facility's referral level was an important factor affecting the manner and duration of the first mother-infant contact. Infants were placed on mother's chest naked, covered with blanket more frequently (66.07%) in tertiary facilities (p=0.023) and were placed for longer periods (15-30 minutes) each time (100%) in tertiary facilities (p=0.015).

DISCUSSION

Caesarean section is the most common surgical procedure in the world, with its prevalence steadily rising. Advance in medicine and perinatal diagnostics came together with higher percentage of Caesarean sections, although its over 20% increase is not related to decreased maternal and infant mortality. Poland has one of the highest Caesarean sections rates in Europe, with a rise from 19.6% in 2000 to 43.9% in 2017. Main indications for the surgery include birth asphyxia and failure to progress in labour. However, procedure is increasingly performed despite no coexisting risk factors against natural delivery. Caesarean sections constitute higher risk of complications for the mother, including thromboembolic events, post-partum haemorrhage, abnormal placental attachment in later pregnancies, complications during other surgical

interventions in the abdomen. Newborn complications from Caesarean sections include delayed fluid absorption in the alveoli (wet lung), leading to respiratory distress (also in full-term infants), disrupted intestinal microbiome, increased risk of allergy, asthma and type 1 diabetes [9].

Caesarean section delivery also impairs the skin-to--skin contact, and subsequently, breastfeeding. In line with the WHO guidelines, mother-infant first contact should be initiated in the operating room and continued in the recovery. It should last until the first feeding is complete, for not less than one hour [1]. In this study it was observed that in only 11.73% of cases the contact was initiated in line with the guidelines, however, it was very short (a few seconds in 8.87%, 1 to 5 minutes in 2.04% and 6 to 15 minutes in 1.02%). In most cases (51.53%) the contact was initiated after preliminary assessment of general condition at the resuscitation-procedure station. Then, its duration was slightly longer: a few seconds in 19.39% of cases, 1 to 5 minutes in 23.48% and 6 to 15 minutes in 7.65%. None of the observed cases followed the duration guidelines. Research by Childbirth with Dignity Foundation (FRpL) revealed that 55% of maternity facilities declare that the infant is placed on mother's chest after every or almost every Caesarean section delivery [10]. This study shows that the mother-infant contact is actually provided a lot less frequently than declared by the facilities. Strangely enough, these declarations are not reflected in facts, and despite the benefits of the skin-to--skin contact, it is still a misperformed procedure.

The manner of the first contact after Caesarean section should be the same as after vaginal delivery. Naked infant should be placed on mother's naked chest. In this study, only 28.57% of infants were placed as described. Most frequently, infant was placed cheek-to-cheek (40.82%). Infants were also placed on mother's chest dressed (14.80%). Both of these manners are improper ways to conduct skin-to-skin, as they carry no benefits related to mother's skin touching infant's skin. Those only serve as a way for a mother to meet the child. Similar results were reported in a social audit in the region of Lesser Poland. Only 20% of infants were placed naked on mother's chest, and 50% were placed cheek-to-cheek [11].

This study shows that until the surgery was completed, which is approximately 30 minutes after birth, infant was most frequently in a cot under father's care (42.86%) and in father's arms (7.65%). FRpL report showed similar results, with 30% of infants being placed in a cot under relative's care. An alternative to skin-to-skin with the mother is skin-to-skin with another person chosen by the mother (most frequently the child's father). Unfortunately, it would require the hospitals to provide space for a kangaroo chair close to the operating room. As shown by Niedospial, 44% of facilities declare they provide opportunities for skin-to-skin to a selected relative [11]. It is satisfactory, yet should only be the case when mother cannot hold the child on her chest. Guala et al. identified relationship between implementation of mother's skin-to--skin contact with her infant and exclusive breastfeeding post-discharge. Whenever first contact was performed by the father or not performed whatsoever, the infant was less often exclusively breastfed [6].

One of the factors influencing mother-infant contact is their being in the same room. It promotes bonding and breastfeeding [12]. It also reduces mother's anxiety levels concerning her child's well-being and health [8], as well as raises her pain threshold [13]. This study shows that 46.43% of infants were in the same room with their mothers for the first 2 hours, but 27.05% of children were in the neonatology unit. Prospective, randomised trial by Schneider et al. revealed that number of infants transferred to neonatology units for observations was lower if the skin-to-skin contact was initiated shortly after Caesarean section [7]. These results conclusively indicate the benefits of the prompt skin-to-skin contact after delivery.

Another factor affecting the manner of mother-infant first contact was the facility's referral level. This study revealed that in tertiary facilities newborns were placed on mother's chest after Caesarean section obeying the guidelines more frequently ($p=0.023$) and the contact was the longest – 15-30 minutes ($p=0.015$). In Poland, Perinatal Care Improvement Program introduced the division into primary, secondary and tertiary referral level facilities in 1995. This system was developed in the 1970s in many countries (Sweden, United Kingdom, Canada, United States) and decreased perinatal mortality and premature delivery prevalence [14]. Primary facilities provide for physiological cases and short-term care for unexpected complications. Secondary facilities care for average pathologies. Tertiary facilities provide care for the most severe cases. There are also tertiary plus facilities, where rarer morbidities can be treated cross-regionally [15]. In each facility, the staff should be working in the environment of professional development, but in tertiary facilities, the staff experience should base on continuous treatment, diagnostics and physical examination of mothers and/or infants in life threatening conditions, theoretical and practical professional courses, research internships in leading domestic and foreign facilities. One can assume that tertiary facility staff often care for the patients in grave condition and it may be easier for them to identify patients with low risk of complications, therefore promote mother--infant contact.

Mother-infant separation was introduced in early 1900s and became common in the second half of 20th century. Initially, mothers were given general anaesthesia for the delivery, which made any interaction after birth impossible. Infants were separated from the mothers for 24-48 hours. When regional anaesthesia became popular, infant separation was still standing strong. Usually the reason behind it was not infant's condition, but the facility's customs [16]. Today, there is a drive to initiate mother--infant contact after 'uncomplicated' Caesarean sections, yet the procedure's implementation is far from the contact performed after vaginal birth. Presumably, the greatest impediment to skin-to-skin after Caesarean sections is that the staff is used to previous practice. Introducing changes in the procedure involves every member of the medical team, i.e. gynaecologist, anaesthesiologist, neonatologist, midwifes, theatre nurses, paediatric nurses [17].

It is vital that new procedures are designed after consultations with entire crew involved in the Caesarean section. To give one example, neonatologist is required to fill in the birth weight in medical history. In Newborn Development History there is a box to fill in the birth weight, hence the need to weigh them immediately after delivery. However, if it was possible to note that the child's weight would be filled in after skin-to-skin, one of the impediments to the contact would be gone. There are many facilities that introduced changes in terms of mother-infant contact. All of them declare it was a good decision for both patients and hospital [12,13,18,19,20].

Placing mother and infant in the same room immediately after Caesarean section can be thought of as a marketing move. It may be a way to compete with other facilities over where the parents choose to deliver their baby. Caesarean section is a surgery and as such requires the staff to carefully observe both mother and infant. Despite proven benefits of the skin-to-skin contact, it is crucial to identify the cases where it can be dangerous (mother's sleep deprivation or fatigue). Mother's awareness level and capability to stay alert while caring for the infant have to be assessed and thoroughly monitored by the medical team.

CONCLUSIONS

1. Mother-infant skin-to-skin contact after Caesarean section is not implemented according to guidelines in terms of initiation time, duration and manner.
2. The most common reason to disrupt mother-infant contact was performing standard newborn procedures.
3. Analysis of the gathered material indicates the need to systematise the implementation of the Perinatal Care Organisation Guidelines and the WHO guidelines in this area.

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