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Maternal obesity Maternal and Neonatal Outcomes and Postpartum Recovery Quality: Two Case Reports

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ABSTRACT
Objective: To evaluate the maternal and neonatal outcomes of pregnant women with maternal obesity and to determine the effect of maternal obesity on the quality of postpartum recovery. Materials and Methods: Data were collected using a personal information form and the Quality of Postpartum Recovery Scale (WHRQoS). Two pregnant women who had a full-term, singleton, live pregnancy, with a Body Mass Index (BMI) above 30.0, one with a normal birth and one with a cesarean section, were interviewed during the intrapartum and postpartum processes. Case 1: She was 24 years old, had a gestational age of 38+4, gave birth via normal vaginal delivery and had a BMI of 36.7. The baby's birth weight was 3215 gr, 1st minute Apgar score was 8; 5th minute Apgar score was 9. Postpartum 1st hour blood sugar was 88; WHRQoS score was 90. Case 2: She was 30 years old, gestational age 39, delivered by cesarean section and BMI was 37.2. The baby's birth weight was 3335 gr, 1st minute Apgar score was 8; 5th minute Apgar score was 9. Postpartum 1st hour blood sugar was 117; WHRQoS score was 61. Conclusion: Gestational diabetes mellitus, a complication of maternal obesity during pregnancy, was diagnosed in pregnant women and oxygen support was provided to both babies after birth. Postpartum recovery score was considerably lower in mothers who delivered by cesarean section compared to mothers who delivered normally. This situation is thought to be due to the burden of obesity along with the difficulties experienced after a surgical operation.

1.INTRODUCTION

When we look at human history, excess weight has been perceived as a sign of prosperity and wealth in almost all societies. This perception is appropriate and natural given that human beings attempt to cope with hunger and poverty [1]. Obesity is an important public health problem with physical, psychological, and social consequences [2]. The World Health Organization (WHO) defines obesity as "an abnormal or excessive accumulation of fat in the body that impairs health" [3]. The definition and grading is evaluated based on the Body Mass Index (BMI) using the formula "BMI=Weight (kg)/Height (m^2)"[4].

Pregnancy is a period in which both physiological and psychological changes occur. One of the important physiological changes during this period is body weight gain. Physiologically developing fat storage occurs due to increased plasma volume, total water volume, and conception components. The combination of pregnancy and obesity paves the way for combined risk complications, increasing the risk of developing obesity, diabetes, and cardiovascular disease in pregnancy complications and in the baby's later life [5]. It is important to monitor weight gain throughout pregnancy. The American Institute of Medicine (IOM) and the American College of Gynecology and Obstetrics (ACOG) state that pre-pregnancy BMI should be used as the basis for prenatal body weight gain. The weight that women with a BMI of 30 and above should gain during pregnancy should not exceed 7 kg [6,7]. In maternally obese women, although there is an increase in the risk of distress, bleeding, and cesarean delivery, problems such as prolonged cesarean delivery are more common. In addition,

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the risk of gestational diabetes, hypertension, difficulty in ultrasonographic imaging, preeclampsia/eclampsia [8], endometritis, prolonged hospital stay, thromboembolism, and urinary system infection also increases. Risks such as low APGAR score, macrosomia, birth trauma, labor induction, anomalies, hypoglycemia, prematurity, and fetal death also increase in babies born to pregnant women with obesity. Obesity can negatively affect the duration of breastfeeding initiation and continuation [8,9,2,10]. Both human studies and experimental animal models have determined that maternal obesity plays a role in the increased risk of developing obesity and adipose tissue dysfunction [11].

Birth is an important experience that affects women's lives physically, psychologically, and socially. This effect continues during postpartum. The traditional approach considers the postpartum period not as a process but on a cross-sectional basis and focuses mostly on mortality and morbidity criteria when assessing maternal health. The contemporary approach argues that these criteria alone will not be sufficient, therefore it is necessary to focus on the recovery levels of mothers and the changes in their quality of life during the postpartum period [12]. According to the Postpartum Care Management Guide Circular No. 2010/27 of the Republic of Turkey Ministry of Health; Statements such as "For cases that do not develop postpartum complications, the puerperal and newborn should stay in the hospital for at least 24 hours after vaginal birth and at least 48 hours after cesarean birth" remind us of the importance of the postpartum period. Examining the factors affecting recovery in the postpartum period and solving problems are part of midwifery care [13].

2. MATERIALS AND METHODS

2.1. Data Collection Tools

Data; It was collected using the personal information form, maternal-neonatal information form, and Postpartum Recovery Quality Scale.

Personal Information For

This form consists of a total of 8 questions including sociodemographic characteristics (age, education level, income level, family type, etc.).

Maternal and Neonatal Information Form

This form contains information about the mother and the newborn during the intrapartum period and the first 24 hours of the postpartum period, maternal results (delivery mode, parity, postpartum oxygen saturation, fetal There are 27 questions regarding monitoring results, etc. and seven questions regarding the characteristics of the newborn (1st and 5th minute Apgar score, weight, etc.). The form has been studied by researchers in the literature [13,14].

Postpartum Healing Quality Scale (Obstetric Quality -of- Recovery Score)

Its validity and reliability were determined by Önal et al. [13], who reported that it is a two-factor scale consisting of 11 items. Each item was scored between 0 and 10 points (0-completely disagree, 10-completely agree). The first factor seeks an answer to the question "How did you feel in the last 24 hours" and is 1-2-3-4-5. It contains items, all of which are reverse scored, and scores are received between 0 and 50. The second factor is "How are you feeling right now?" is looking for an answer to the question and 6-7-8-9-10-11. It contains items, and scores ranging from 0 to 60 are received. Therefore, higher scores indicate better postpartum recovery. The scale has no cut-off points. The total score obtained from the scale ranged from 0 to 110. Onal et al. The Cronbach's alpha coefficient of the scale, whose validity and reliability was established by, is 0.781.

2.2. Case Reports

Case Report 1

S.A., 24 years old, primiparous, high school graduate, housewife, 38+4 weeks pregnant. Her pre-pregnancy weight was 85 kg, but now she weighs 100 kg and is 165 cm tall. There are no health problem before pregnancy. She was admitted to the delivery room of a public hospital in the Central Black Sea region for a normal vaginal birth.

It was determined that her pregnancy was a planned and desired pregnancy and that she received folic acid support in the first 3 months of her pregnancy and iron and multivitamin support during the pregnancy. The double and triple screening test results were negative. OGTT at 60 min, blood sugar level of 88 mg/dl and diet was recommended. During the pregnancy checks, her blood sugar level was in the range of 90-110 mg/dl. He continued regular check-ups and stated that he did not follow a diet for the last 2 weeks.

Cervical examination during admission to the delivery room, dilation of 1.5 cm; 20% effacement, head level of 3; and closure of amniotic fluid. Contractions are regular, ranging from every 3 minutes to approximately 80 seconds. During the intrapartum period, pregnant women were taught breathing exercises and pelvic tilt exercises and were encouraged to exercise. Approximately 5 hours after admission to the delivery room, mediolateral Normal vaginal birth was performed

by applying episiotomy. Immediately after birth, skin-to-skin contact was achieved, and the cord was clamped approximately 3 minutes later. A 3215g, 49cm live, singleton, female baby was born. 1st minute Apgar score was 8, 5th minute Apgar score was 9. Episiotomy repair was performed while the mother was breastfeeding her baby. When bleeding was monitored and the vital signs were stable, the mother provided oral intake. The first mobilization was performed 2 hours after birth. The baby's first breastfeeding period occurred immediately after birth. After the completion of the procedures, he was transferred to the Gynecology and Obstetrics Department. The total DSSIQ score applied 24 hours after birth was 90.

Case Report 2

C.M., 30 years old, multipara, university graduate, cook. She is 36+5 weeks pregnant, but according to ultrasonography measurements, the fetus is compatible with 39 weeks. Her pre-pregnancy weight was 90 kg, but now she weighs 110 kg and is 171 cm tall. There are no health problem before pregnancy. A fetal delivery room was created in a public hospital in the Central Black Sea region. Because the monitoring result was nonreactive, the patient was admitted to the emergency room for cesarean delivery.

It was determined that her pregnancy was planned and desired and that she would receive folic acid, iron, and multivitamin support during pregnancy. Because she experienced vaginal bleeding in the first trimester, she took progesterone supplements and continued treatment until the 32nd week of pregnancy. The double and triple screening test results were negative. OGTT at 60 min, blood sugar level of 110 mg/dl, diet was recommended, and gestational diabetes was diagnosed. During the pregnancy checks, her blood sugar level was in the range of 110-130 mg/dl. He continued regular checkups.

When she came for normal pregnancy checks, she was given a cesarean section because the Non - Stress Test (NST) result was nonreactive and she experienced minimal deceleration. A 3335g, 50cm live, singleton, male baby was born. 1st minute Apgar score: 8; 5th minute Apgar score: 9. The total score of DSİKÖ, applied 24 hours after birth) was 61.

3. RESULT and DISCUSSION

The common problem in both cases was maternal health problems related to obesity.

Case report 1; While her pre-pregnancy BMI was 31.22 kg/m^2, she gained 15 kg during pregnancy and her BMI became 36,7.

Case report 2; Ç.M. While her pre-pregnancy BMI was 30.42 kg/m^2, she gained 29 kg during pregnancy and her BMI became 37,2.

According to prenatal weight gain recommendations, the weight that pregnant women should gain during pregnancy should be 5-9 kg according to IOM and 7 kg or less according to ACOG. However, the amount of weight gained during pregnancy was excessive in both patients. Pregnant women with a pre-pregnancy BMI > 30 kg/m^2 should receive counseling training during pregnancy, and weight control should be achieved with dietary recommendations [6,14,15].

During vaginal birth in obese pregnant women; fetal Complications such as dysfunctional labor, prolonged labor, bladder-perineum traumas and shoulder dystocia caused by macrosomia ocur. The probability of cesarean delivery is 3 times higher in obese women and 2 times higher in overweight women than in women of normal weight. This situation can be reduced by midwifery care provided before birth [2,16]. Midwifery care provided in case report 1 reduced the need for voluntary cesarean delivery and encouraged pregnant women to have a normal birth. Obesity also affects breastfeeding in mothers. It has been stated that obese women are more reluctant to start and continue breastfeeding their babies. Obesity also causes a delay in milk production and a decrease in the duration of breastfeeding [17]. Postpartum breastfeeding was noted in both case reports. However, since the birth of case report 1 resulted in a normal vaginal birth, the patient started breastfeeding her baby for the first 5 min and then breastfed for approximately 20 min. However, since the birth of case report 2 resulted in a cesarean section, the patient started breastfeeding 2 hours after birth and continued breastfeeding for 10 minutes. This indicates that breastfeeding is affected by not only obesity but also the type of birth.

Obesity during pregnancy causes short- and long-term health problems for the mother and child. These health problems negatively affect women's quality of life [17]. As a result of the DSSIQ we applied at the 24th postpartum hour, the rate of birth was higher than that of cesarean section in case 1 of a normal vaginal birth. This situation is maternal. It is thought that, in addition to obesity, the longer recovery time after cesarean delivery is due to the difficulty in taking care of herself and her baby independently.

Table 1: Distribution of obstetric and postpartum findings in case reports

	Case report 1:	**Case report 2.**
Parity	Primiparous	Multiparous
Gestational week	38 weeks 4 days	36 weeks 5 days
Gestational week on ultrasonography	Compatible with 38 weeks	Compatible with 39 weeks
Age	24	31
Size	165 cm	172 cm
Kilo	100 kg	110 kg
BMI during pregnancy	36.7	37.2
Pre-pregnancy kg	85 kg	90
Pre-pregnancy BMI	31.22	30.42
Kg of body weight during pregnancy	15 kg	20 kg
OGTT 60-min result	88 mg/dl	110 mg/dl
Blood sugar level upon hospital admission	92 mg/dl	120mg/dl
Postpartum blood sugar Immediately after birth Postpartum 3rd hour Postpartum 6 h Postpartum 12th hour	 88 mg/dl 90 mg/dl 96 mg/dl 113 mg/dl	 117 mg/dl 149 mg/dl 127 mg/dl 124 mg/dl
First breastfeeding time and duration	minutes in the first 5 minutes	2 hours after birth to 10 minutes
Postpartum hemorrhage follow-up (first 6 hours)	4 pets	1.5 pets
The first mobilization time	2 hours after birth	6 hours after birth
Time from first oral intake	2 hours after birth	6 hours after birth
Postpartum 6th hour hemoglobin level	12.3 g/dl	9.8 g/dl
Baby weight	3215 grams	3335 grams
Apgar score 1st minute 5th minute	 8 9	 8 9
Baby's postpartum blood sugar	67 mg/dl	80 mg/dl
Baby's 6th hour blood sugar	72 mg/dl	67 mg/dl
Umbilical artery blood gas oxygen level	26.4	47.5
Postpartum Recovery Quality Scale Score	90	61

OGTT: Oral Glucose Tolerance Test, mg: milligram, dl: deciliter, gr: gram, BMI: Body Mass Index, min: minute, cm: Centimeter

4. CONCLUSION AND RECOMMENDATIONS

In order for maternal obesity complications to cease to be a health problem that concerns the entire world population during childhood and advanced adulthood, the society should be made aware of the importance of midwives' consultancy role in terms of women's health and mother-child health, starting from the preconception period. As a state policy, necessary public spaces should be created for this health problem that concerns the whole society, and all individuals should fulfill their civic duty. Healthy generations are necessary for a healthy society.

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