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INTRAUTERINE FETAL DEMISE AND LATE MOTHERHOOD – A CASE REPORT

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A – study design, **B** – data collection, **C** – statistical analysis, **D** – interpretation of data, **E** – manuscript preparation, **F** – literature review, **G** – sourcing of funding

ABSTRACT

Background: Intrauterine fetal death is a potential risk in each stage of pregnancy, regardless of the mother's age. In Poland in 2015, new standards of care were introduced for women with obstetric failure.

Aim of the study: This study aimed to analyze intrauterine fetal demise in the context of late motherhood.

Material and methods: Medical documentation and a semi-structured interview were used.

Case report: A 41-year old primipara in 37 weeks of pregnancy, who had not felt fetal movements for 2 days, was diagnosed with intrauterine fetal demise. The pregnancy was uneventful before, but the patient suffered from hypertension and severe obesity. As a result of induced labor, a male neonate weighing 2260 g, 49 cm long, with no signs of vital functions, was born. After the birth, it was established that the child died due to an umbilical cord accident. The mother was given the appropriate time to see the child for the last time. During delivery and hospitalization, the patient's privacy was ensured, she was isolated from other women in labor and new mothers and was assisted by her family. During the hospital stay, the patient was under the care of the obstetrician, midwife and clinical psychologist. She was discharged from the hospital after 6 days.

Conclusions: The loss of a child is one of the most traumatic experiences for a mother, particularly in the case of older mothers. A woman's fertility declines with age, so getting pregnant again might prove extremely difficult for older women.

KEYWORDS: fetal death, late motherhood, obstetric failure

Background

Intrauterine fetal demise (IUFD) is one of the complications that can occur at any stage of pregnancy, regardless of the mother's age. Stillbirth is defined as the birth of a child without signs of life after 24 weeks of pregnancy or in Poland, after 22 weeks of pregnancy [1].

There are three groups of factors that affect IUFD: maternal, fetal and placental. The most common maternal factors include hypertension during pregnancy, pre-eclampsia, heart diseases, mental health problems, diabetes, obesity, high multiparity or primiparity and smoking during pregnancy, including passive smoking. Fetal factors include the sex, isoimmunization of Rh, 37 weeks of gestation, lethal malformations and chromosomal defects, fetal growth restriction such as a birth weight below the 10th percentile, and intrauterine infections. IUFD factors related to the placenta and umbilical cord, in addition to premature detachment and placenta praevia, include umbilical cord prolapse, neck wrapping (usually multiple) and true umbilical knot [2,3].

Since disseminated intravascular coagulopathy (DIC) and puerperium sepsis are the most common complications of IUFD, vaginal delivery is recommended for a woman's safety. Waiting for spontaneous labour to begin significantly increases the risk of complications, so the standard procedure is to induce labor [1].

After a stillbirth, mothers are more likely to experience symptoms of post-traumatic stress, depression and sadness, as well as an unwillingness to become pregnant again [3–6].

The rate of late motherhood is increasing worldwide. It could be attributed to various causes, including infertility and socio-economic reasons in developed countries, but also, for example, the governmental

demographic policy, as in the case of the "one-child policy" in China [7–9]. Additionally, late motherhood may result from the difficulty in choosing the right partners for developing a satisfying relationship, waiting to achieve financial stability or a greater focus on women's careers [8]. The risk of pregnancy complications grows with the age of the woman. Age-related conditions, such as hypertension, diabetes and previous surgery of the reproductive organs, can lead to complications during pregnancy, childbirth and puerperium [10].

The main complications during pregnancy, childbirth and puerperium are pregnancy-induced hypertension, gestational diabetes, anaemia and infections of the respiratory and urinary tract. The mother's health problems may be the cause of fetal intrauterine growth restriction and IUFD, preterm birth or the need for different medical and surgical interventions. Due to the increased risk of chromosomal defects, women over 35 years of age may opt for free of charge, non-invasive and invasive prenatal tests in Poland. Researchers have indicated an increased risk of complications growing with the age of the mother [10].

In 2015, the Regulation of the Polish Ministry of Health defined the standards of perinatal care in case of complications and high-risk pregnancy. This was the first legal regulation concerning the treatment of obstetric failures in Poland. In addition to medical standards, it focused on proper communication with the patient in a traumatic situation caused by the loss of a child [11].

In 2016, based on the Regulation, recommendations concerning the care of women in case of obstetric failures were made locally for the Mazovian Province. The guidelines were developed by a team of regional consultants in the field of perinatology, obstetrics and gynecology, public health, a psychologist and a priest. The publication is divided into two parts, and it is intended for medical staff and accompanying persons. The guidelines discuss the stages of mourning in an accessible way, which is important not only for the mother and her relatives, but also for the medical personnel. The mother should be informed about her state of health and her rights so that she can make conscious decisions and give consent to carry out the necessary medical procedures. The woman should be isolated from other mothers in the delivery room during labor and in the maternity ward after the childbirth. Psychological support is needed not only for patients, but also for medical staff. All procedures should be carried out with respect for the mother's privacy and to engender a sense of intimacy. It is also important to provide opportunities for family and relatives to say goodbye and receive mementos from the child. Finally, there are current legal acts relating to burial and assistance for the mother [12].

Aim of the study

This study aims to draw attention to the problem of stillbirth in the context of late motherhood.

Material and methods

A semi-structured interview was conducted and medical records were analyzed. The interview lasted approximately 2 hours and a standardized examination of health behaviour was performed using the inventory of health behaviour (IZZ) during the patient's hospital stay.

The study has the consent of the bioethical committee no. AKBE/214/2017. The patient's consent to publication was obtained.

Case report

The 41-year-old primipara in 37+6 week of her second pregnancy came to the Clinic of Obstetrics and Perinatology in Warsaw in November 2017 due to not feeling fetal movements for 2 days. Ultrasound examination revealed no heartbeat and fetal hypotrophy. On admission, the patient's vital signs were BP 160/120, HR 120/min, Group B Strep (GBS) (+).

The reason for late motherhood was the difficulty in finding a proper partner, without history of infertility. She was unmarried, had a high socio-economic status and a university degree and lived in the city. She miscarried her first pregnancy at week 12 one year before.

During her current pregnancy, she regularly attended medical appointments. The combined test was performed at 13+2 weeks of pregnancy: the ultrasound examination showed no abnormalities, betahCG=1.107 MoM, PAPP-A=0.193 MoM (MoM - multiple of median, multiple of median for a given gestational age). An increased risk of trisomy 21 (1:15), 18 (1:57) and 13 (1:125) was found, but the patient did not decide on amniocentesis and karyotyping. A free fetal DNA test was performed, which did not indicate an increased risk of trisomy. The patient had arterial hypertension treated before pregnancy and obesity; her BMI before pregnancy was 35 (II degree obesity). During pregnancy, her body weight increased by 19 kg, reaching 119 kg. Due to the very low level of PAPP-A protein corresponding to 0.193 MoM, the patient was on prophylactic doses of 75 mg of acetylsalicylic acid per day, from the end of the first trimester to the end of the 36th week. Standardized examination of health behaviour revealed a high degree of healthy behaviour, including normal eating habits, preventive behaviour, positive mental attitude and health practices. She was a passive smoker and her partner smoked 10-20 cigarettes a day.

After admission to the Department, cephalic position of the fetus was confirmed and pre-induction was initiated with Misoprostol. Then, due to the lack of reaction to prostaglandins, Foley's catheter was inserted into the cervix. The next day, the induction was performed with an oxytocin infusion. During labor, the patient was given epidural anesthesia.

After 3 hours of the first period and 30 minutes of the second period of childbirth, she delivered a male neonate weighing 2260 g, 49 cm long (1st percentile) with no signs of vital functions. After childbirth, the

umbilical cord conflict was considered as a probable cause of death; the umbilical cord was twisted twice around the child's neck and once around the child's torso.

As requested, the mother and her loved ones were given about 2 hours - according to current regulations - to see the child for the last time, to say goodbye and to be given a footprint of the child as a memento.

Subsequently, an autopsy was performed, in which the cause of death indicated asphyxia on the ground of the umbilical cord entanglement. No developmental abnormalities were found. In order to exclude genetic disorders, an array Comparative Genomic Hybridization (aCGH) test was performed, which did not reveal any abnormalities.

The neonatal weight was in the 1st percentile and, as previously mentioned, at end of the first trimester, very low level of PAPP-A = 0.193 MoM was noted. This demonstrates that there was evidence of intrauterine growth restriction (IUGR) most likely due to placental insufficiency that had developed despite acetylsalicylic acid prophylaxis. In IUGR, the umbilical cord is often abnormally thin due to the paucity of Wharton's jelly and is hence prone to fatal cord entanglement.

Due to the increase in acute phase protein CRP and leucocytosis indicating the development of inflammation, the patient received first intravenous and then oral antibiotic therapy.

The mother, with the help of her family, decided to bury the child. After the birth, the woman was both sad and calm. She was aware that with age it would become more difficult for her to get pregnant, especially with existing health problems. Traumatic experiences with the birth of a dead baby and an earlier miscarriage directly impacted the woman's decision to refrain from getting pregnant again.

During the hospital stay, the patient's privacy was ensured, and she was deliberately isolated from other mothers and their children. The childbirth took place in a separate delivery room. During the entire hospitalisation, the patient was in a single room, under the care of obstetricians, midwives and a clinical psychologist. The family had the opportunity to contact her without time limits.

The patient was fully informed about her state of health and her rights, which helped her to make conscious decisions and consent to medical procedures. She was given the opportunity and enough time to discuss her decisions with her partner. A questionnaire and information for patients and accompanying persons was according to Recommendation for the Mazovian Province for medical personnel. She was discharged from the hospital after 6 days.

Conclusions

Losing a baby is one of the most traumatic experiences, especially for older women, where getting pregnant again can be difficult because fertility decreases with age. In addition to proper medical treatment, it is extremely important to provide psychological support and to respect the privacy of the patient and her family.

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