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Twin Pregnancy with Omphalocele: Challenges in Detection and Management

Aditya Wibowo[1], Muhammad Alamsyah Aziz[1], Adhi Pribadi[1], Akhmad Yogi Pramatirta[1], Herman Sumawan[2], Aria Yusti Kusuma[2]

[1]Department of Obstetrics and Gynecology, Universitas Padjadjaran, Dr. Hasan Sadikin General Hospital, Bandung, Indonesia
[2]Department of Obstetrics and Gynecology, Universitas Jendral Soedirman, Prof. Margono Soekarjo General Hospital, Purwokerto, Indonesia
Email: alamsyahaziz9119@gmail.com

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Abstract

Twins are more likely to have congenital anomalies than singletons. Omphalocele is still a life-threatening congenital abnormality that requires adequate antenatal diagnosis and early treatment. A 31-year-old woman presented with labor pains in the eighth pregnancy month. There was a clear, watery discharge from the birth canal 4 hours before admission. She was previously diagnosed with twins, with one cotwin having suffered omphalocele through a 6-month-ultrasound examination. At admission, the condition was diagnosed as monochorionic-diamniotic twins at 32 - 33 weeks in the 2nd stage of labor: the first baby cephalic presentation; second breech presentation with omphalocele. She vaginally gave birth to twin infants, with those having Apgar 5' of 6/7, respectively. Both infants were admitted to the intensive care unit and under treatment.

Keywords

Spontaneous Delivery, Twin Pregnancy, 2nd Baby Breech Presentation, Monochorionic Diamniotic, Omphalocele on 2nd Baby Case Report

1. Introduction

Twin pregnancies are linked to an increased risk of congenital defects. According to studies, twin pregnancies had a 1.5 - 3.0 times higher chance of abnormalities than singleton pregnancies [1]. Omphalocele, also known as exomphalos, is a congenital deformity caused by an anterior abdominal wall closure defect. The abdominal viscera herniates into the base of the umbilical cord insertion, which is protected by a membrane sac [2]. A peritoneum and amnion membrane sur-

rounds the eviscerated organs. Atypical karyotypes and associated abnormalities are common [3].

The survival rate is around 80%, and it is directly linked to the severity of the concomitant abnormalities. Thus, neonates with isolated omphalocele have a higher chance of survival (90%) [4]. Both congenital abdominal wall anomalies, omphalocele, and gastroschisis, have a high mortality rate. Only 60% of children born with such defects live beyond their first year. While the exact etiology of protruding abdominal wall congenital abnormalities is unknown at this time, it is most likely the result of a complex interaction of genetic and environmental factors, with the intensity and timing of these factors' effects determining the congenital deformity [5].

2. Case Description

A 31-year-old G2P0A1 of 8 months gestation presented with labor pains. There was a clear, watery discharge from the birth canal 4 hours before admission. The patient was known to have twin pregnancies when she visited an obstetrician at three months of gestation. The patient was informed that the second twin had an omphalocele when an ultrasound was performed at six months of gestation. Since early pregnancy, there has been a history of vaginal discharge, without itch, odor, and fever. The patient never received any medication. A history of twin pregnancy in her family was denied. History of consumption of fertility drugs was denied. History of congenital anomalies in the family was denied. History of chronic diseases such as hypertension, diabetes mellitus, asthma, and heart disease was denied.

The patient has had an ultrasound with intrauterine twin pregnancy. Baby 1: According to pregnancy 31 - 32 weeks EFW 1892 grams, fetal heart rate (+). Other examinations were within normal limits. 2nd baby: breech location is the same as 31 - 32 weeks gestation EFW 1825 grams FHR (+). Stomach: stomach filled normally, bladder filled normally; found defects in the diameter of 4.09 cm; lining (+), contains intestines (4.63 × 4.07 cm). Conclusion: 32 - 33 weeks of gestation; twin pregnancy; first baby in lie position; second baby in breech position with omphalocele.

The diagnosis is G3P2A0 parturient 32 - 33 weeks of pregnancy; 2nd stage of labor, twin pregnancy; 1st baby cephalic presentation; 2nd baby breech presentation with omphalocele.

Diagnosis after delivery P3A0 spontaneous preterm delivery; twin pregnancy; 1st baby cephalic presentation; 2nd baby breech presentation; monochorionic diamniotic; omphalocele on 2nd baby. First baby girl born with cephalic presentation Weight: 1925 grams, Length: 41 cm, APGAR 1': 4, 5': 6, and a second baby girl born with spontaneous Bracht, Weight: 1925 grams, Length: 42 cm, APGAR 1': 5, 5': 7, with Respiratory Distress Syndrome and differential diagnosis of Pneumonia; premature baby; omphalocele.

The twins are now being treated in the NICU with a ventilator, both are 22

days old, with the first baby weighing 3000 grams and 44 cm long, and second baby weighing 2500 grams and 45 cm long. Both babies have received HB0 immunization. Both babies had pneumonia and were hemodynamically unstable.

3. Discussion

Omphalocele has been linked to maternal age, with both very early and late maternal ages being identified as risk factors [6]. Infants with omphalocele were more likely to be born at extremes of maternal age. Mothers of 35 years of age or older have a prevalence ratio of 1.77, and those younger than 20 years of age have a prevalence ratio of 1.34 [7]. This patient was 31 years old, which is still considered a low-risk pregnancy age group.

Obesity in the mother has been linked to an increased risk of having an omphalocele baby. Mothers with a BMI greater than 30 had an increased chance of having a baby with an omphalocele, with an odds ratio ranging from 1.63 to 3.3 [8] [9]. This patient had a BMI of 29.6 kg/m^2, which is considered obese by the Asia-Pacific BMI standard [10].

As for the neonatal risk factors of omphalocele, genetic variations and chromosomal abnormalities play a significant role. Omphalocele is most commonly found in trisomy 13, 18, and 21. With up to 80% - 90% of patients having an omphalocele, trisomy 18 is the most common chromosomal abnormality [6]. This patient has yet to undergo genetic testing.

Twins have a higher prevalence of congenital malformations than singletons, and MC twins have a rate twice that of BC twins, nearing 10%, with often discordant phenotypes. Congenital abnormalities are more common in twins (6.5 percent versus 2.8 percent in singletons), with the risk being significantly higher in MC twin pairs (10.7 percent). Furthermore, in 86.4 percent of MC pregnancies involving at least one fetus with congenital abnormalities, the deformities between the fetuses are discordant [11]. Because aneuploidy [6] causes most omphalocele, it could be caused by unequal repair of an initial aneuploid zygote or by aberrant mitosis before or after splitting, resulting in a discordant twin with omphalocele, as in this case [11].

Preterm premature rupture of membranes (PPROM) occurs in 33% of omphalocele pregnancies, with preterm birth occurring in 26% - 65%. Whether or not an omphalocele occurs, both disorders should be treated the same way. Pregnancies with omphalocele have a higher risk of intrauterine fetal death (IUFD), which has been reported to occur at a rate of up to 20% in fetuses with underlying genetic disorders or in instances that are not isolated [12]. Because of the relationship between omphalocele, fetal growth restriction, and IUFD, antenatal surveillance can begin as early as 32 weeks, but fetal and maternal comorbidities will decide the frequency. Furthermore, patients who live a long distance from their intended delivery facility should consider moving between 34 and 35 weeks [13].

The perinatal mortality rate for omphalocele varies depending on the extent of the omphalocele, the presence of hereditary abnormalities, and the presence of

concurrent structural malformations. Prenatally identified omphaloceles have a lower survival rate than those discovered after delivery when all cases are considered (23 percent vs. 80 percent). Small, isolated omphaloceles have a 90 percent one-year survival rate. With a giant omphalocele, the mortality rate rises from 52 percent to 89 percent in other morphological abnormalities and nearly 100 percent in the case of chromosomal disorders. As a result, palliative care should only be considered a treatment option if a multidisciplinary consensus on the prognosis has been reached [14].

Furthermore, having a significant heart defect increases the risk of newborn death. Early omphalocele removal can cause hemodynamic instability by affecting both preload and afterload. Compared to children with isolated omphalocele, infants with congenital heart disease had an increased mortality risk. If a congenital heart disease is present, the heart defect is typically repaired surgically before the omphalocele is closed. Healing the ectopic cordis takes precedence in situations like the Cantrell pentalogy with ectopia cordis, which may affect how the omphalocele is treated.

4. Conclusion

Omphalocele is the most often encountered congenital abdominal wall abnormality in pediatric surgery. The reported prevalence has increased over the last decade, owing primarily to the widespread use of prenatal ultrasonography. Early detection of these malformations and associated anomalies enables multidisciplinary counseling and delivery planning in a center equipped to assist with a high-risk pregnancy, pediatric surgery, and neonatology. Closure of abnormalities, even multiple-stage closures, is always possible, as is the care of most cardiac, urinary, and gastrointestinal anomalies. The advancements highlighted herein in the care of neonates with abdominal wall abnormalities ensure that most of them survive to adulthood. Aspects of medical care changeover will also be discussed, including fertility and symptom management.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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