Case Report

Fetal death at third trimester due to nuchal cord type B

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Abstract: Among umbilical cord complications, a relatively common one is the nuchal cord which may cause perinatal morbidity and mortality. 5-18% of fetal asphyxia is associated with umbilical cord-related complications. In the fetus of a primigravid woman at 24-year-old, intrauterine fetal death was diagnosed by color Doppler examination at 31 weeks of pregnancy. Termination was done with misoprostol induction. Stillborn fetus else was seen to be grossly normal. Her routine laboratory evaluation and ultrasonography was normal at first visit. Her regular antenatal visits were unremarkable except for elevated alpha-fetoprotein level of 3.23 multiples of median (MOM) detected by triple test performed at 18th weeks of pregnancy. The aim of this study is to describe a case of fetal death at third trimester.

Key Words: Fetal death; fetal asphyxia; umbilical cord; nuchal cord type B; cord accident.

Decreased fetal movements and unfavourable fetal hearth rate patterns are attributed to intrauterine asphyxia at advanced gestational weeks (1). 5-18% of fetal asphyxia is associated with umbilical cord-related complications and such cord-related complications were reported to be responsible for 10-12% of all stillbirths (1, 2, 3). Among the umbilical cord complications, a relatively common one is the nuchal cord which may cause perinatal morbidity and mortality (4).

The aim of this study is to describe a case of fetal death at third trimester caused by nuchal cord type B and to discuss the diagnosis and management of nuchal cord.

Case Report:

A 24-year-old, primigravid woman admitted to outpatient clinic at 31 weeks of pregnancy with a complaint of decreased fetal movements for 1 week. Her regular antenatal visits were unremarkable except for elevated alpha-fetoprotein level of 3.23 multiples of median (MOM) detected by triple test performed at 18th weeks of pregnancy. Detailed ultrasonography at 19th gestational week was normal and no abnormality was seen to be associated with elevated level of alpha-fetoprotein. Her last visit was at 23rd weeks. On her current visit, fetal cardiac activity could not be detected on ultrasonography and fetal biometry was in accordance with 28th weeks of pregnancy. Intrauterine fetal death was confirmed by color Doppler examination. Pregnancy was terminated with misoprostol induction. Stillborn fetus was seen to be grossly normal, but it was macerated and multiple nuchal cord entanglements were detected (Figure). Our diagnosis was fetal death at third trimester due to nuchal cord type B.

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Discussion:

Although the majority of clinically recognized pregnancies result in a healthy child, 15-20% ends in fetal death (5). Of all fetal deaths, most are caused by acute or chronic intrauterine asphyxia and a significant proportion of antenatal fetal deaths are attributed to umbilical cord complications resulting in nearly 10% of stillbirths (1, 2). Umbilical cord abnormalities include excessively short or long umbilical cord, hiperhelical or hypohelical umbilical cord, single umbilical artery, nuchal cord, marginal insertion, velamentous insertion, vasa previa, and prolapse of umbilical cord (4).

Nuchal cord is a commonly seen umbilical cord complication and is defined as the umbilical cord being 360 degrees around the fetal neck (4). Nuchal cord is seen in 25-35% of deliveries and multiple nuchal cords are detected in 4-6% (6, 7).

Nuchal cord may be transient. However, non-reassuring fetal status in labor, meconium passage, intrauterine growth restriction, lower Apgar scores as well as fetal death may occur since presence of nuchal cord creates considerable risk for fetal asphyxia (8, 9). The degree of risk is related with the type of nuchal cord. Type A can undo spontaneously, but type B is tightly locked and increase the risk of fetal mortality (10).

The reason for nuchal cord to arise is not clear. Nevertheless, monozygotic twin pregnancies, male fetus, excessively long umbilical cord, history of previous pregnancies with nuchal cord, and placenta located posteriorly are mentioned as risk factors (4). However, none of these risk factors were present in our case.

Nuchal cord has two types; type A and type B. Type A represents umbilical cord loosely present around fetal neck. On the other hand, in type B, nuchal cord is tightly locked and stillbirths are mostly associated with this type (10). The differentiation between these two types is possible only after delivery of the fetus.

The diagnosis of nuchal cord is possible with ultrasonography and color Doppler imaging. Three-dimension ultrasonography may also be useful in diagnosis where available (4). Unfortunately, our case could not be detected to have nuchal cord during her regular antenatal visits.

In case of a nuchal cord diagnosis, fetuses at or near term should be followed under close monitorisation and cesarean section should be performed when fetal distress is detected. Fetuses far from term should be followed with ultrasonography and non-stress test and distressed fetuses should be delivered after fetal pulmonary maturation induction (4).

As a conclusion, nuchal cord should always be kept in mind in patients with a complaint of decreased fetal movements and undiagnosed nuchal cord, especially nuchal cord type B may result in intrauterine fetal death as was seen in the current case.

References:


