Rev Med Int Sindr Down. 2017;21(1):17–19

FUNDACIÓ CATALANA SÍNDROME DE DOWN
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INTERNATIONAL MEDICAL REVIEW ON DOWN'S SYNDROME

www.elsevier.es/sd

CASE REPORT

Previable premature rupture of membranes with a Down syndrome foetus

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Received 24 April 2016; accepted 30 September 2016
Available online 18 January 2017

KEYWORDS
Previable premature rupture of membranes;
Down's syndrome

Abstract There is a scarcity of literature about Previable Premature Rupture of Membranes in Down Syndrome (DS) Pregnancies. The present report concerns the difficulty in prenatal counselling in a Previable Premature Rupture of Membranes in a DS Pregnancy. The outcome appears improved in our case.

We report the case of a DS Pregnancy with severe oligohydramnios since the 17th week of gestational age due to Previable Premature Rupture of Membranes. She delivered at the gestational age of 33 weeks and 3 days a healthy DS baby without signs or symptoms of neonatal pulmonary hypoplasia, skeletal abnormalities or infectious morbidity.

In Previable Premature Rupture of Membranes, foetal death is common. When a viable gestational age is reached, respiratory complications and other morbidities such as sepsis are frequent. Newborns with DS have an increased risk of respiratory tract infections, what added to the risk of congenital diseases, made us believe in a poor prognosis. More reports are needed in order to provide a better prenatal counselling.

PALABRAS CLAVE
Rotura prematura de membranas previable;
Síndrome de Down

Rotura prematura de membranas en gestación previable con feto con Síndrome de Down

Resumen La literatura sobre roturas prematuras de membranas en embarazos con Síndrome de Down (SD) es escasa. El presente caso relata la dificultad de asesoramiento prenatal en el caso de una rotura prematura de membranas en una gestación previable con SD. El resultado en nuestro caso resultó ser mejor al esperado.

Exponemos el caso de un embarazo de SD con oligoamnios severo desde la semana 17 de edad gestacional, debido a una rotura prematura de membranas. La paciente tuvo el parto en la semana 33 más 3 días. Nació una niña sana, con SD, sin signos o síntomas de hipoplasia pulmonar, anormalidades esqueléticas o morbilidad infecciosa.

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http://dx.doi.org/10.1016/j.sdeng.2016.09.002

En el caso de una rotura prematura de membranas en una gestación previable, la muerte fetal es común. Cuando se alcanza una edad gestacional viable, las complicaciones respiratorias y otras morbilidades como la sepsis son frecuentes. Los recién nacidos con SD tienen un mayor riesgo de infecciones de las vías respiratorias, lo que en conjunto, con el mayor riesgo de presentar anomalías congénitas, nos hizo creer en un mal pronóstico. Se necesitan más artículos acerca de este tema con el fin de ofrecer un mejor asesoramiento prenatal a los padres.

Introduction

Providing early, correct guidance for future parents is vitally important when an unexpected prenatal diagnosis is faced. The majority of the professionals working in obstetrics doubt their ability to inform about prognosis in the case of premature births.[1] This situation escalates when a specific prenatal diagnosis with little available information is added to the prematurity.

Pregnancies in which a premature rupture of membranes occurs during the second trimester have significant risk for the development of neonatal pulmonary hypoplasia, skeletal abnormalities, general perinatal morbidity and mortality and maternal infectious morbidity.[2] In addition, newborns with Down syndrome (SD) are at greater risk of suffering from respiratory tract infections and congenital anomalies.[3,4]

There is no literature available on premature rupture of membranes in pregnancies with SD. Consequently, there is a lack of scientific evidence to turn to when guiding parents about the prognosis in these cases.

Case

We present the case of patient with a pregnancy with SD and severe oligohydramnios from the 17th week of gestation due to a premature rupture of membranes (PROM).

The patient was a 44-year-old Caucasian female, with a result of high risk for SD in the screening for the first trimester. The patient decided to carry out a diagnostic amniocentesis at the 16th week of pregnancy and the diagnosis of a female foetus with SD was confirmed. The patient decided not to interrupt the gestation.

In the 17th week of gestation, the patient came to emergency services because of vaginal discharge. She presented with a cervix 35 mm long and severe oligohydramnios. It was decided to admit the patient and begin administering i.v. antibiotic therapy (ampicillin and gentamicin). No signs or symptoms of chorioamnionitis appeared at any time.

The patient was provided separate guidance by the Departments of Obstetrics and of Neonatology. She decided not to interrupt the pregnancy and accepted responsibility for possible complications.

After 7 days of hospital stay, the decision was made to follow the patient up on an outpatient basis, with consultation and blood analysis every 2 weeks. In the face of the PROM, she was advised to continue with her normal routine and use protection for the vaginal discharge. The patient decided to continue working until the outcome.

In the 24th week of gestation, corticosteroids were administered (betamethasone 12 mg/24 h $\times$ 2 doses by intramuscular injection) for foetal pulmonary maturation. In each consultation, severe oligohydramnios, adequate foetal growth and normal assessment of blood flow through the middle cerebral artery and the umbilical artery were recorded.

At the gestational age of 33 weeks and 3 days, the patient began labour. After a single dose of intramuscular corticosteroids (betamethasone 12 mg), she underwent a caesarean section because of transverse position and severe oligohydramnios.

Birth weight was 1930 g and the Apgar scores were 9 at the first minute and 10 at 5 minutes. The newborn was admitted to the neonatal intensive care unit without any signs or symptoms of neonatal pulmonary hypoplasia, skeletal abnormalities or infectious morbidity. Neonatology assessment revealed only a small perimembranous interventricular communication. This interventricular communication was corrected surgically 5 months after birth.

The female child is currently 2 years and 3 months old and requires no medical treatment.

Patient consent was obtained for the publication of this case.

Discussion

In PROM cases in preterm gestations, foetal death is frequent. Survival rate following conservative treatment in PROM cases below 22 weeks of gestation is estimated at 14.4%.[5] When a viable gestational age is reached, respiratory complications and other comorbidities such as sepsis are frequent: 66% for respiratory distress syndrome, 9–20% for pulmonary hypoplasia, 18–35% fro bronchopulmonary dysplasia, 5% for intraventricular haemorrhage, 4% for necrotising enterocolitis, 4.6% of retinopathy of prematurity and 18–42% for neonatal sepsis.[5]

Newborns with SD have higher risk of respiratory tract infections. This fact, along with the greater risk of congenital anomalies such as interventricular septum defects (present in up to 45%), suggests a poor prognosis in the case of PROM in a preterm pregnancy with SD.[3,4]

This patient frequently asked if the results available in the literature on PROM in preterm pregnancy could be extrapolated to the case of a foetus with SD. She received

the explanation that, given the lack of literature on these cases in pregnancies with SD, we could only use the literature available on the general population and that we could presume that the prognosis would possibly be worse. This lack of information caused our patient considerable anxiety during pregnancy.

The only specific information given to the patient about her case was the recommendation for early neurostimulation and a good working relationship with caregivers during the first years of life to reduce social deficits of adaptation or development.[6] In our case, 2 years and 3 months after the birth, the girl is healthy, without significant diseases or deficits in adaptation.

We consider that more publications on this subject are needed to make it possible to offer parents better prenatal guidance.

Conflicts of interest

The authors have no conflicts of interest to declare.

References

1. Powell MR, Kim UO, Weisgerber MC, Simpson PM, Nugent M, Basir MA. Readiness of obstetric professionals to inform parents regarding potential outcome of premature infants. J Obstet Gynaecol. 2012;32:326–31.
2. Locatelli A, Ghidini A, Verderio M, Andreani M, Strobelt N, Pezzullo J, et al. Predictors of perinatal survival in a cohort of pregnancies with severe oligohydramnios due to premature rupture of membranes at <26 weeks managed with serial amnioinfusions. Eur J Obstet Gynecol Reprod Biol. 2006;128:97–102.
3. Roizen NJ, Patterson D. Down's syndrome. Lancet. 2003;361:1281–9.
4. American Academy of Pediatrics Committee on Genetics. American Academy of Pediatrics: health supervision for children with Down syndrome. Pediatrics. 2001;107:442–9.
5. Waters TP, Mercer BM. The management of preterm premature rupture of the membranes near the limit of fetal viability. Am J Obstet Gynecol. 2009;201:230–40.
6. Mazurek D, Wyka J. Down syndrome – genetic and nutritional aspects of accompanying disorders. Rocz Panstw Zakl Hig. 2015;66:189–94.