

EP10.42. Prenatal botulinum toxin as an adjunct for primary closure in giant omphalocele: First reported case in Mexico

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Introduction

Omphalocele is a congenital defect characterized by the protrusion of abdominal organs within a three-layered membrane, occurring in 1 to 3.8 per 10,000 live births (1-3). **Giant omphalocele (GO)** is a severe form, defined by an abdominal wall defect larger than **5 cm**, often containing the liver. Treatment aims to reduce herniated viscera and close the fascia and skin to restore abdominal integrity (4). GO is associated with high morbidity and mortality due to malformations and complications like increased intra-abdominal pressure, cardiorespiratory compromise, and vascular alterations (3,5). **Botulinum toxin A (BTA)** has been used as an adjunct in neonatal, pediatric, and adult patients, inducing temporary muscle paralysis to expand abdominal capacity, improve organ-abdominal proportion, and facilitate safer reintegration of the eviscerated organs with fewer complications (6).

Case Presentation

A fetus was diagnosed with GO at 18 weeks' gestation, with no additional malformations detected (Figure 1). Genetic testing confirmed a normal 46XX karyotype. At 34 weeks, 25 units of BTA were injected bilaterally into the abdominal wall under ultrasound guidance, with no complications. At 36 weeks, the patient experienced premature rupture of membranes, and the newborn, with a 5.5 cm GO, underwent successful abdominal wall reconstruction on day six. Oral feeding was delayed due to pulmonary hypertension but was well tolerated by discharge on day 30. At the 4-month follow-up, the infant showed no complications and normal weight gain.

Discussion

BTA has been documented as a safe and effective adjunct for managing severe abdominal wall defects in both adult and pediatric patients. Prenatal administration, 2 to 4 weeks before birth, maximizes its effect at delivery, promoting abdominal wall relaxation and facilitating organ reintegration with fewer complications (7). By inducing temporary muscle paralysis, BTA improves fascial approximation, reduces tension, and lowers intra-abdominal pressure, minimizing postoperative risks (4,5).

This is the first reported case of prenatal BTA use for GO in Mexico. A prior study in Colombia showed that BTA injections altered fetal abdominal shape, suggesting effective muscle relaxation (1). In our case, the newborn exhibited this morphology postnatally (Figure 2), and surgical repair was successfully performed on day six (Figure 3). Despite developing pulmonary hypertension secondary to a patent ductus arteriosus, the infant required parenteral nutrition for only two weeks and showed a favorable clinical evolution in the first months of life.

Conclusions

Prenatal BTA use in GO enhances abdominal wall relaxation, facilitating primary closure with fewer complications. By reducing intra abdominal pressure and optimizing fascial approximation, it may minimize the need for staged repairs. To the best of our knowledge, this is the first reported case in Mexico, demonstrating a succesful outcome. Further research is needed to validate its long term benefits and stablish standarized protocols.



Figure 1. Prenatal ultrasound demonstrating a giant omphalocele, measuring 5.5 cm in its greatest diameter, with herniated abdominal contents visible within the sac.



Figure 2. Egg shaped abdomen with a giant omphalocele at birth.



Figure 3. Abdominoplasty and umbilicoplasty

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