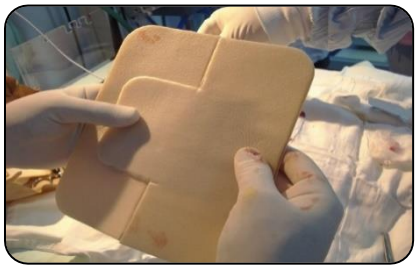
Clinical protocol for the treatment of giant omphalocele using Duoderm®.
30-05-2023
H.R. Langeveld, S.C.A.T. Verbruggen, S. Cochius-den Otter, R. Wijnen.

Treatment with hydrocolloid dressing (Duoderm®) for staged reduction of the omphalocele until intra-abdominal reduction is achieved and the abdomen can be closed primarily.

Inclusion criteria:

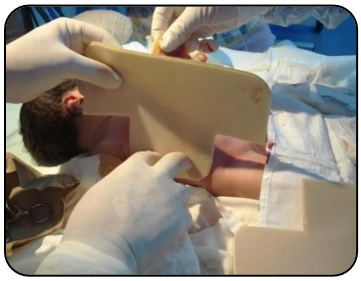
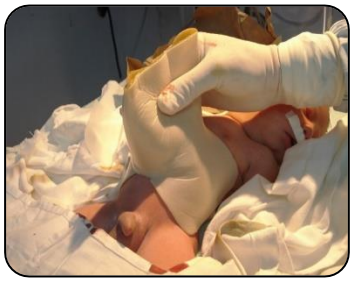
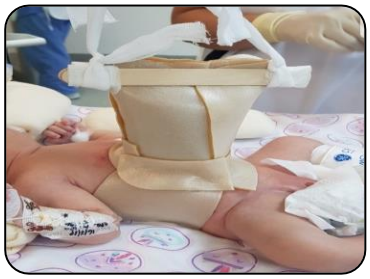
Giant omphalocele (defined as > 5 cm and liver herniation) that cannot be closed primarily, according to the attending pediatric surgeon and is suitable for treatment with a hydrocolloid dressing.

The neonate is treated in the intensive care unit. Treatment with respiratory support, sedation and possibly relaxants is executed according to local protocol. Monitoring of intra-abdominal pressure by bladder pressure measurement is performed if possible. Parenteral or enteral nutrition is provided according to local protocol.



Cut two T-shaped pieces from Duoderm® 20 x 20 cm. If a clamp is in the umbilical cord, it should be removed. Attach the base of the T-shape to the abdominal wall beside the omphalocele using the adhesive layer of the Duoderm®, repeat this on the opposite side. Connect both pieces to the amnion and to each other, creating the silo. (see the illustrations).

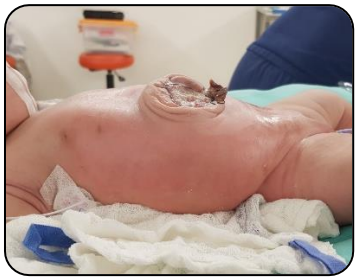
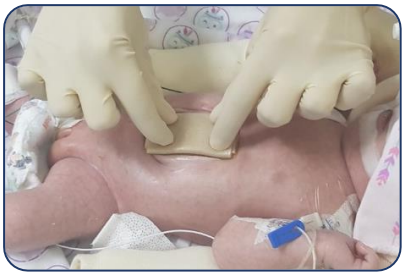
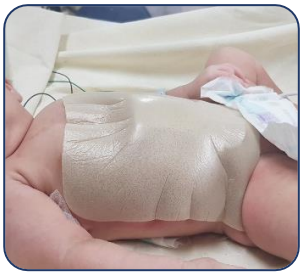
If the amnion is ruptured, try to repair it by suturing it. If suturing is unsuccessful, follow the gastroschisis protocol.

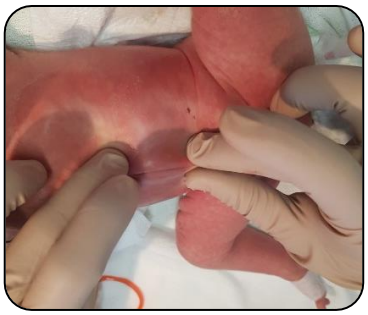
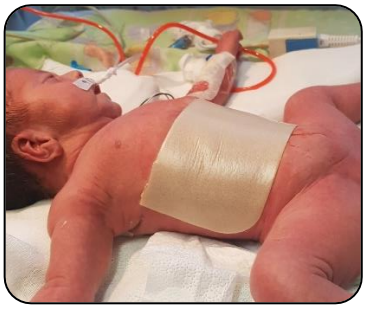
Perform reduction every 24-48 hours: The maximum intra-abdominal pressure allowed is 20 cm H2O. If manifestations of high intra-abdominal pressure arise, such as respiratory compromise, decreased urine output or reduction of oxygen saturation in lower limbs, intra-abdominal pressure should be decreased by loosening the silo.

Replace Duoderm every 4-5 days or sooner if necessary – i.e., in case of (partial) loosening, little pressure at base, moist.

After full reduction, make abdomen even 'flatter'.

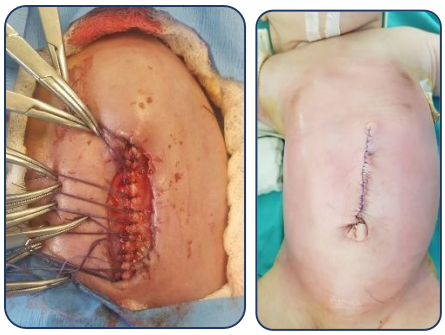
Next: Inverting amnion to see if neonate tolerates definitive closure.

If inverting the amnion is well tolerated, the abdomen can be permanently closed:

In 90% of cases closure of the abdomen can be performed after approximately 14 days.

Surgery: Close peritoneum, fascia, and skin. If this provides challenges, either first apply Botox® (if possible 2 weeks before closure), use the component separation technique or a mesh (Dual mesh®). If possible, the umbilical cord is preserved and included in the closure.



The clinical protocol with the photographs was prepared with the permission of Dr M. Guelfand based on the article by C. Albello et al. Management of giant omphalocele with a simple and efficient nonsurgical silo. May 2021, Journal of Pediatric Surgery. **https://doi.org/10.1016/j.jpedsurg.2020.12.003**

Questions regarding treatment technique can be addressed to: miguelfand@gmail.com