

A Technique of Transporting Neonates with Gastroschisis

Gastroschisis and ruptured exomphalos major are congenital anomalies in which intestinal loops are extruded through a defect in the abdominal wall and are exposed to environment. They are invariably fatal unless properly repaired by surgery. Although survival of these neonates approaches 90% in western countries, it is still below 30% in most of the Indian centers(1-3).

Prior to 2003 our results were also very poor. On clinical audit, we recognized that it is the faulty referral which is responsible for poor outcome in many cases. These neonates were used to be referred with the intestines wrapped in sterile gauze pads or cotton wool. These dressing materials, although sterile initially, quickly become unsterile

when being soaked with peritoneal exudates. Such wet fabrics are ineffective in preventing bacterial contamination because microbial ingress occurs by capillary action. Wet gauze dressing also promotes evaporative loss thereby inducing hypothermia and dehydration. Moreover, the minute lint shed from these materials are difficult to get rid of and they act as nidus of postoperative infection. In 2003 we devised a protocol and circulated it to all the local medical practitioners of our area.

According to this protocol, the referring pediatrician is encouraged to gently wash the exposed intestine with lukewarm sterile normal saline. This will decontaminate microbes that were acquired during vaginal delivery. The bowel loops are then placed inside a cut-open sterile Urobag™ (urine-collecting bag) (*Fig.1*). Outer to the plastic bag, a layer of sterile absorbent gauze packs are kept and bandaged. This bag is vertically suspended to



Fig. 1. Correct method of placing intestinal loops into a cut-open sterile Urobag™ (urine-collecting-bag).

prevent kinking of bowel (*Fig.2*). This is important because kinking may lead to ischemia and gangrene. As the plastic bag is impervious, evaporative heat loss and dehydration are prevented. The transparent bag also permits frequent inspection of the viability

of the bowel loops during transport without disturbing the dressing. Urobag™ is easily available and is economically cheap.

Survival in the last two years approached 75% as compared to 5% in the pre-campaign year. Even we



Fig. 2. Correct method of bandaging and suspending the Urobag (tm). At the summit of the dressing intestinal loops are seen through the transparent plastic bag.

have recently set the Indian record of the survival of the lowest weighing gastroschisis baby(4). Improved quality of nursing care is also partly responsible for the reduced mortality, besides proper referral and transport.

**V. Raveenthiran,
S. Cenita,**

*Division of Pediatric Surgery,
Rajah Muthiah Medical College,
Annamalai University,
Tamilnadu,
India.*

E-mail: vrthiran@yahoo.co.in

REFERENCES

1. Bhatnagar V, Das K, Agarwala S. Mitra Dk. Silo construction from a sterile adhesive film and polypropylene mesh in the repair of gastroschisis and omphalocele. *Pediatr Surg Int* 2001; 17: 356-358.
2. Puri A, Bajpai M. Gastroschisis and omphalocele. *Indian J Pediatr* 1999; 66: 773-789.
3. Baerg J, Kaban G. Tonita J, Pahwa P, Reid D. Gastroschisis: A sixteen-year review. *J Pediatr Surg* 2003; 38: 771-774.
4. Raveenthiran V, Subramanian P, Ragavan M, Mayavadana Rao PV. Smallest Indian neonate survives silo treatment for gastroschisis. *J Indian Assoc Pediatr Surg* 2004; 9: 166-168.