LETTERS

When is the appropriate timing of surgical repair for congenital diaphragmatic hernia?

Dear Editor,

Congenital diaphragmatic hernia (CDH) is a rare developmental defect, associated with a mortality rate of 30-40%. Correct timing of surgical repair, in order to improve survival rate, remains controversial. We report a series of nine newborns admitted to our neonatal intensive-care unit with CDH over a 5 year period. Gestation age was 31-39 weeks and birth weight was 1700-3420 gr. All newborns were born by elective caesarean section. Eight neonates presented with left-sided CDH (Bochdalek type), while in one case CDH was right-sided. In 5/9 CDH was identified prenatally. There were no coexisting anomalies found in any newborn. According to the standardized reporting system suggested by Lally KP et al[1] our patients were categorised as follows: 5 at stage B (1 of which died), 2 at stage III. Two of nine neonates were intubated during resuscitation and were placed on mechanical ventilation subsequently, while the remaining developed respiratory distress later, within the first 2 hours of life. Persistent pulmonary hypertension (PPHN) was evident in 4/9 (3/4 died). Surgical repair took place in the first 10-72 hours of life and after they were stabilized using high-frequency oscillation ventilation, combined with administration of inhaled nitric oxide (iNO) in 5 cases and conventional ventilation in 4 cases. Criteria for surgical repair were: no signs of PPHN, hemodynamic stability, pre-ductal saturation of 85-95% at FiO_2< 0.5, diuresis 2 ml/kg/h and lactate <3mmol/Lt[2].

Three newborns died (2 were not operated and 1 was surgically repaired within 10 hrs of life) with a total survival rate of 66.7%. All 6 neonates (34-37 weeks) who were surgically repaired after the first 24 hours of life (mean 37.5 hours) survived. Primary repair was applied in 5 cases, while Gore-Tex patch repair was applied in one case. Ventilatory support duration was 84-648 hours and mean length of stay was 17.5 days.

These results support a late (>24hrs) versus early surgical repair (<24hrs) for CDH treatment in newborn infants[3]. Lung hypoplasia due to CDH malformation could lead to PPHN. Surgical repair deteriorates lung compliance; therefore a period of respiratory stabilization is essential for the hypoplastic lung to develop.

Treatment strategy for CDH still remains a challenge for multi-skilled teams involved. Delayed surgical correction of CDH, after cardiopulmonary stability, along with novel operative techniques, seems to improve survival than early intervention.

References

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Conflict of interest

The authors declare that there is no conflict of interest.

Keywords: Congenital diaphragmatic hernia, survival rate, timing

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