

SVIII7: THORACOSCOPIC REPAIR OF CONGENITAL DIAPHRAGMATIC HERNIA: SELECT CRITERIA TO IMPROVE NEONATAL OUTCOME

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Background Background: Despite the technical feasibility of thoracoscopic repair of congenital diaphragmatic hernia (CDH) in neonates several investigation revealed at least 2 major problems of this procedure being A) the potential impact of CO₂ causing hyperkapnia and acidosis and B) an increased recurrence rate especially after patch repair (Fuishiro J 2016). This study researched the present literature to establish an algorithym selecting the appropriate neonates.

Materials and methods Methods: A systematic literature review of the medical data bank PubMed was performed using key words like congenital diaphragmatic hernia, CDH, neonate, thoracoscopy, repair, selection, algorithym. Any study describing a algorithym based on patient criteria and/or surgical aspects was retrieved and analyzed for ist efficacy to reduce perioperative morbidity.

Results Results: Within the last 5 years 8 papers actually recognized selection criteria and established an algorithym for thoracoscopic CDH repair in neonates. Preoperative contraindications included: Hemodynamic instability (Snoek KG 2016), patient on/after ECMO, liver up in the chest (Lacher M 2015). Intraoperative parameters to convert included severe hyperkapnia (PaCO₂>90mmHg), acidosis (pH<7,1), size C or D defect (Putnam J Am Coll Surg 2017), need for a patch (Putnam LR, JPS 2017), surgeons inability to suture in time. Low (no) flow CO₂ was recommended as well as Near infrared spectometry (NIRS) to observe cerebral oxygenation (Conforti A JPS 2016). Taking these informations into consideration we designed a joint algorithym (modified according to Costerus S 2016).

Conclusions Conclusion: The present data in the literature clearly demonstrate that thoracoscopic repair should not be considered generally for the whole spectrum of neonates with CDH. A preoperative selection process is needed as much as careful intraoperative monitoring to decrease the perioperative morbidity and identify the appropriate candidates.

Key words congenital diaphragmatic hernia, CDH, neonate, thoracoscopy, repair, selection, algorithym