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Is There A Higher Recurrence Rate in Thoracoscopic Repair of Congenital Diaphragmatic Hernia (CDH) Patients

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Objectives: Due to recent advances in minimal invasive surgery, thoracoscopic repair of CDH has been a treatment option. The aim of this study is to analyse the patients retrospectively operated in newborn period with a thoracoscopic approach.

Methods: A retrospective review of neonatal CDH patients from March 2011 to August 2017 was performed. The medical records of patients were examined for prenatal diagnosis, gender, side, gestational age, birth weight, Apgar scores, usage of high-frequency oscillatory ventilation (HFO), usage of nitric oxide (NO), pulmonary hypertension, associated anomalies, usage of prosthetic patch, surgical approach, length of hospital stay, postoperative complications, mortality, recurrence.

Results: 28 neonates with CDH were enrolled in the study. In 19 patients there was prenatal diagnosis. There were 7 girls and 21 boys in the study. 26 of the cases were left sided and 2 were right sided. The mean gestational age was 37,5 weeks(32-41), birth weight 2900 gr(2000-3800), Apgar score 7,5 (2-9). In 14 patients HFO, in 11 patients NO were used. ECMO treatment were used in 3 patients. 21 patients had pulmonary artery pressure recorded, the mean pressure was 53 (36-120mmHg). 5 patients had associated anomalies (Down syndrome(1), ASD(1), meningomyelocele(1), hydronephrosis (1), atypical face (1). Thoracoscopic approach was used in 14 patients and in 9 patients laparotomy was performed. 5 patients died before any corrective operation. There was conversion to open surgery in 2 patients (laparotomy (1), thoracotomy (1)) due to instability in saturation during anesthesia. Prosthetic patch was used in 8 patients (laparotomy(6), thoracoscopy (2)) and pledgets were used in all patients. The median length of hospital stay were 41 days (9-180). Pleural effusion (4), chylothorax (3), pneumothorax (2), hiatal hernia (3), central venous line infection (2) were seen as complications during the postoperative period. 3 recurrences were seen in patients operated with a thoracoscopic approach (25%). There were no recurrences in patients operated with laparotomy.

Conclusion: Despite the recent advances minimal invasive surgery; there are concerns reported in the literature about higher recurrence rates in thoracoscopic repair of CDH (7.9%) compared to open surgery (2.7%).

Keywords: Congenital diaphragmatic hernia, thoracoscopy, ECMO