OPEN ACCESS

Journal of Neonatal Surgery 2019; 8:12

CASE REPORT

A Stormy Course in a Preemie Secondary to Esophageal Perforation: A Case Report

Naveen Parkash Gupta,[1]* Abishek,[2] Chetnanand Jha,[3] Saurabh Gupta,[3] Kavita Khanijo[3]

1 Department of Neonatology, Madhukar Rainbow Children Hospital, Delhi.

2 Department of Pediatric Surgery, Max Super Specialty Hospital, Patparganj, Delhi.

3 Department of Neonatology, Max Super Specialty Hospital, Patparganj, Delhi.

ABSTRACT

Preterm newborns have various problems owing to immaturity of various organs especially lungs. In addition to prematurely developed organs, added injuries of other organs can worsen the prognosis. A preterm 33-week SGA baby had several pneumothoraces in first week of life on both right and left side, addressed by tube thoracostomy. Later on, it was identified that an iatrogenic/spontaneous esophageal perforation presumably caused multiple pneumothoraces.

Key words: Preterm; Pneumothorax; Esophageal perforation; Iatrogenic

CASE REPORT

A preterm (33-week), small for gestational age baby girl with birth weight of 950 grams, born to primigravida mother through caesarean section done in view of fetal distress. Antenatal course was complicated with presence of gestational hypertension, absent end diastolic flows in umbilical artery and severe oligohydramnios. APGAR score were reported as 3, 5 and 7 at 1,5 and 10 minutes, respectively. Baby was put on positive pressure ventilation due to apnea. A nasogastric tube was inserted. The baby also received intratracheal surfactant therapy following which the oxygen and pressure needs decreased.

On day 2 of life, baby developed pneumothorax on left side for which tube thoracostomy was done in 5th intercostal space (Fig.1A). Next day tube thoracostomy was done on right side for right sided pneumothorax. Over next few days, despite tube thoracostomy, the baby frequently had increased ventilatory requirements that needed frequent aspiration of air through the chest tube with the help of a syringe. Some clear fluid was also draining through the chest tubes but that was thought to be reactionary fluid. USG showed minimal collection of fluid on right side (approx. 10 ml) which could not be drained. CT scan chest showed consolidation. Sepsis workup was normal although baby was receiving antibiotics.

On 10th DOL, the baby was started on NG feeds which were topped up gradually. On D15 of life, milky fluid started draining through the chest tube. Upper GI study (Gastrografin) confirmed esophageal leak (Fig.1B). Previously done x-rays were reviewed again and it was noticed that nasogastric tube position was abnormal on chest x-ray done on D2 of life (Fig.1A). Conservative treatment was started due to critical condition of baby. Nasojejunal tube was attempted under fluoroscopy but could not be passed. Therefore, feeding jejunostomy was done and feeding was started through it. Gastrografin swallow was repeated after 3 weeks which showed no leak (Fig.1C). Moreover, the pneumothoraces were also settled down but the baby could not be weaned off the ventilator. Meanwhile, the baby developed Acinetobacter septicemia for which appropriate antibiotics were started. Baby was shifted to high frequency ventilation as she was not maintain-

Correspondence*: Naveen Parkash Gupta, M.D., DNB Neonatology, Department of Neonatology, Madhukar Rainbow Children Hospital, Delhi - 110017
E mail: drgupta.naveen@gmail.com
Submitted: 26-02-2019
Conflict of interest: Nil

Accepted: 14-11-2019
Source of Support: Nil

ing saturation. She eventually succumbed to death on 44th DOL.

DISCUSSION

Most of the esophageal perforations in neonates are iatrogenic, which usually involve the cervical esophagus. Iatrogenic perforations in lower third of esophagus are very uncommon. In the index case, the lower esophagus had perforation. Etiology of iatrogenic esophageal perforation includes difficult intubation, traumatic laryngoscopy, suctioning of pharynx with a stiff suction catheter.[1-5] Spontaneous esophageal perforations usually involve the distal esophagus, and occurs due to an intrinsic anatomic abnormality of the esophageal wall or esophageal dysfunction. Spontaneous rupture have also been reported in cases of asphyxia and esophagitis. In the index case, an iatrogenic injury leading to esophageal perforation is likely as the position of NG tube on x-rays was not within the due course of stomach.

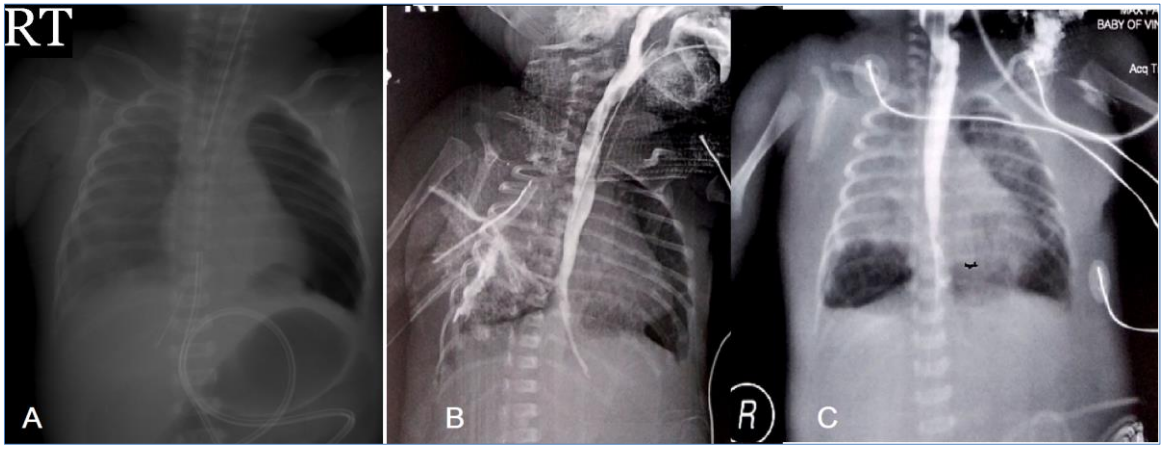

Figure 1: A) X-ray showing pneumothorax on left side. Note the position of NG tube (it is going towards right side). B) Showing contrast leaking from lower esophagus. C) The perforation had been healed but a slight narrowing is obvious at the site of perforation.

Clinical presentation of esophageal perforation may vary depending upon the site of involvement. Vomiting of undigested milk, choking, cyanosis and respiratory distress after feeding, cough, hematemesis, difficulty in nasogastric tube negotiation are seen in proximal esophageal perforations.[2] Sudden respiratory distress secondary to pneumothorax or hydropneumothorax is the most common presentation in case of distal esophageal perforations.[3] in the index case too, the baby had lower esophageal perforation that presumably caused multiple unsettling pneumothoraces.

Management of esophageal perforation is conservative; giving rest to the esophagus and establishing an alternate route of feeding.[1-5] In the index case, we also started conservative management and initially a Nasojejunal tube was attempted under fluoroscopic guidance but feeding jejunostomy had to be done instead. Though, the esophageal perforation was healed as apparent on contrast x-rays but the baby developed Acinetobacter septicemia and succumbed to it.

Consent: Authors declared that they have taken informed written consent, for publication of this report along with clinical photographs/material, from the legal guardian of the patient with an under-standing that every effort will be made to conceal the identity of the patient however it cannot be guaranteed.

Author Contributions: All the authors contributed fully in concept, literature review, and drafting of the manuscript and approved the final version of this manuscript.

REFERENCES

1. Flores NG, Joachin RH, Rodridguez CG. Esophageal perforation in premature newborn infant: Presentation of 8 cases. Bol Med Hosp Infant Nex. 1993; 50:749-53.
2. Modi A, Mathur NB, Sarin YK. Spontaneous neonatal esophageal perforation. Indian Pediatr. 2000; 37:901-3.
3. Cairns PA, McClure BG, Halliday HL, Mc Reid M. Unusual site for oesophageal perforation in an extremely low birth weight infant. Eur J Pediatr. 1999; 158:152-3.
4. Al-Khawahur HA, Al-Salem AH. Iatrogenic perforation of the esophagus. Saudi Med J. 2002; 23:732-4.
5. Filippi L, Pezzati M, Poggi C. Use of polyvinyl feeding tubes and iatrogenic pharyngo-oesophageal perforation in very-low-birthweight infants. Acta Paediatr. 2005; 94:1825-8.