

# A Rare Case of Accidental Esophageal Perforation in an Extremely Low Birth Weight Neonate

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## ABSTRACT

Spontaneous perforation of esophagus in neonates is a rare occurrence. However iatrogenic perforation of the esophagus is not that uncommon, and is most frequently seen in preterm and low birth weight infants. In premature infants, an esophageal perforation (EP) mainly occurs while inserting an orogastric tube. The commonly reported symptoms of EP are sudden onset respiratory distress, due to the pleural effusion and pneumothorax. In our case neonate presented with apnea requiring ventilation. We present a rare case of an Extremely Low Birth Weight (ELBW) neonate with an iatrogenic esophageal perforation who presented with recurrent apneas, outlining aspects of diagnosis and management.

**Keywords:** Apnea, ELBW, Orogastric tube

## CASE REPORT

A female newborn weighing 860 gm was delivered by spontaneous vaginal delivery at 26 weeks of gestation. The baby cried immediately after birth and was shifted to a tertiary care hospital NICU for further management, where she received initial supportive care. On Day 17 of life, after insertion of 5 French orogastric tube, the baby's condition suddenly worsened, and she developed recurrent episodes of apnea requiring mechanical ventilation. A chest radiogram showed the orogastric tube in the right pleural space with a right sided pleural effusion [Table/Fig-1a]. On all previous radiographs, the orogastric tube had been properly positioned. The orogastric tube was removed and a new 5 Fr orogastric tube was reinserted and positioned appropriately, and confirmed both clinically and radiologically. The patient was thereafter managed conservatively with no further complications. A radiological dye study was performed 8 days later which showed no leak in esophagus [Table/Fig-1b], and the baby was gradually weaned off respiratory support. Feeds were reintroduced & gradually increased to full feeds, which were well tolerated, and she was discharged on Day 74 of life.

## DISCUSSION

Traumatic perforations of the pharyngo-oesophageal region in the newborn were first reported by Elkof et al., [1]. Since then, it has been increasingly mentioned as a possible complication of neonatal intensive care. The neonates most at-risk are the small for gestational age (SGA) or premature infants [2]. The overall

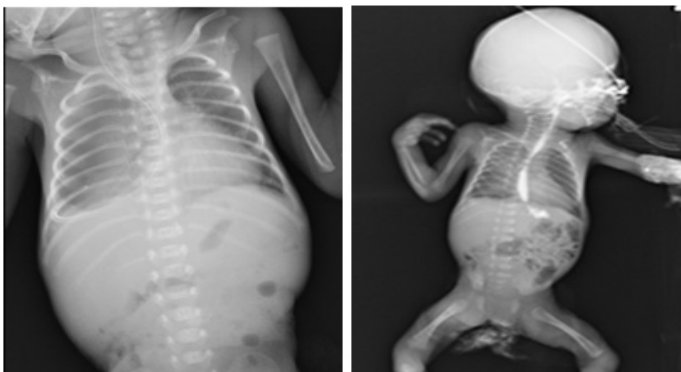
estimated incidence of iatrogenic EP is 0.8% in preterm infants. However, this incidence reaches 4% in newborns weighing <750 gm [3]. Vigorous suctioning of the nasopharynx and oropharynx, repeated attempts to insert nasogastric tubes and endotracheal tubes have been reported as the most common causes of injury [1]. Spontaneous rupture of the oesophagus, secondary to asphyxia and oesophagitis have also been reported [4]. In the above reported case, the esophageal perforation occurred secondary to insertion of a 5 French orogastric tube.

A majority of studies suggest that sudden respiratory distress, secondary to a pneumothorax or hydrothorax is the most common presentation [1,4, 5-9]. However, our baby presented with recurrent apnea requiring mechanical ventilation. The diagnosis of EP is made by identifying a malposition of orogastric tube in the pleural cavity. A plain chest radiograph suffices in usual EP cases [4]. A lateral view, taken at the same time, is also helpful for the diagnosis [10]. However; a contrast study of oesophagus adds little information [5]. Neonates with iatrogenic pharyngo-oesophageal perforation should be treated according to the severity and presentation in each individual case. Removal of the nasogastric tube, initiation of broad spectrum antibiotics and provision of parenteral nutrition / gastrostomy feeds for 7–10 days provides adequate treatment in most cases [9,11]. Most babies can be treated conservatively although surgical intervention may be required in severe cases [11,12]. There is no difference in the reported rate of survival when treated medically versus surgically [9]. Routine surgical intervention does not improve the survival and should be restricted for patients with mediastinitis or mediastinal mass [9]. In our case, conservative management was successful.

In conclusion, EP is a rare complication in the modern neonatal intensive care setting, but can occur even in most experienced hands. It is associated with significant morbidity or mortality. A high index of suspicion is warranted in infants with a sudden deterioration of respiratory status, especially following procedures involving the pharyngeal region. Radiological investigation is required for the diagnosis. Furthermore, we need to be cautious when an orogastric tube is inserted in ELBW neonates.

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**[Table/Fig-1a]:** Chest radiographs showing orogastric tube in right sided pleural space and Pleural effusion **[Table/Fig-1b]:** A radiological dye study performed 8 days later shows no leak in esophagus

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