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Neonatal hypopharyngeal perforation: A case report.

Om Shankar Chaurasiya, V Kumar*

Department of Paediatrics, M L B Medical College, Jhansi, India
*Department of Paediatrics, Lady Hardinge Medical College and Kalawati Saran Children's Hospital New Delhi. India

Abstract

Premature infants are particularly at risk of iatrogenic pharyngoesophageal perforation. It is a rare occurrence but when it does occur it often mimics esophageal atresia. We presented a case of a term neonate who presented with a hypopharyngeal perforation that resulted during ritual procedure (Ghaanti) done by grandmother. Clinical findings, a plain chest x-ray, an esophagography and endoscopy are helpful. Surgery can be avoided in most instances.

Key words. Ghaanti, Intubation, oesophageal perforation, Pharyngeal perforation, ,Pneumothorax

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Introduction

Neonatal pharyngeal perforation is a rare but life threatening condition. It occurs during routine nasogastric tube insertion, suctioning or rarely during endotracheal intubation. Iatrogenic oesophageal or pharyngeal perforation reported mainly in preterm and low birth weight babies[1],secondary to difficult intubation and forceful attempts to pass NG tubes and suction catheters[2] . Associated respiratory distress may be due to infection ,pneumothorax or pleural effusion . We report a case of a term neonate who presented with a hypopharyngeal perforation that resulted during ritual procedure (ghaanti) done by grandmother.

.Case Report

A full term male neonate aged 6 days was transferred to our centre from a peripheral hospital. The 2.0 kg neonate was born vaginally on the way .Then patient was taken back to home and grand mother done ritual procedure (Ghaanti).Baby passed urine and meconium on day 1 of life.Child received breast feed , spoon feed and ghutti but never accepted feed well. On second day of life child was admitted in a nursing home and received iv fluids , antibiotics and nasogastric tube was placed. The child was shifted to our hospital due to financial contraints. On examination the baby was lethargic with poor cry ,and had HR 180/m, RR 76/m, Downes score 5/10 , capillary filling time 5 seconds, peripheral pulses were feeble and fast, temperature 35^0 c (hypothermic),central cyanosis and sclerema on extremities, and anterior fontanel was at level. On respiratory system examination,movements and breath sounds were decreased on right side of the chest with bilateral crepitations. On cardiovascular system normal heart sounds with no murmur. Abdomen was soft , non tender, liver palpable 3 cm below costal margin and liver span was 5cm. On CNS examination baby was lethargic, pupil bilateral 2mm in size and sluggish reacting , decreased cry and activity, neonatal reflexes were decreased. No focal deficit or abnormal movements were noted.

On day 1 baby was in septicemic shock with right sided pneumothorax as evident from skiagram chest. Chest tube drainage was done and shock was managed as per standard shock guidelines. Pneumothorax resolved significantly.

On day 2 of admission respiratory distress increased , cyanosis was present and spo2 decreased to 82-85%.Breath sounds decreased on right side and skiagram chest showed pneumothorax. Chest tube was reinserted .patient improved and saturation increased to 96-98% and repeat chest skiagram showed decrease in pneumothorax .The chest skiagram also showed that NG tube was lying in right side of the chest above diaphragm(fig 1). Therefore lateral view done (fig 2). USG chest was done but inconclusive. So fluoroscopy was planned.

Fluoroscopy showed a fistulous tract from post hypopharynx to post mediastinum to right pleural space fig (3-4). The tip of NG tube was in right pleural space .Direct laryngoscopy showed a semicircular cut in the posterior pharyngeal wall measuring 1.5 mm in length with slough at the margins. Other investigations are as follows Hb 18.6 gm%,TLC 9000/mm3, plt 25000/mm3, liver function test, kidney function tests , S.ca within normal limit. Blood culture was sterile CRP positive ,umbilical catheter

tip showed E coli sensitive to meropenem and ciplox. The diagnosis of iatrogenic hypopharyngeopleural fistula due to NG tube insertion with sepsis with right sided pneumothorax was made.

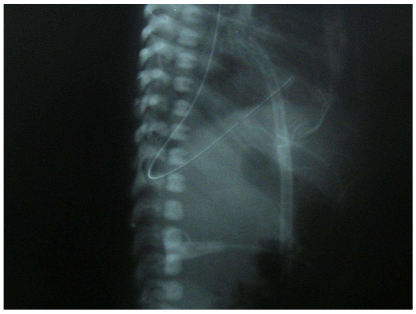

***Figure 1**. Lateral view*

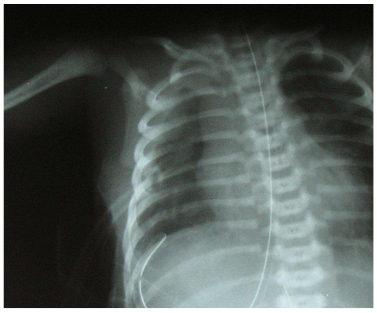

***Figure 2**. X-ray chest AP view*

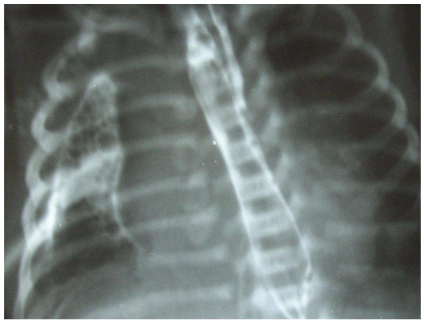

***Figure 3**. Flouroimage chest showing NG tube with spilage of contrast*

The baby was managed conservatively. NG tube was removed, baby was kept nil per orally and iv fluids and antibiotics were continued. After 3 days NG tube was put under laryngoscopic guidance, confirmed by chest skiagram. IG feeds were started. Child improved and pneumothorax resolved fully.After 7 days laryngoscopy showed healing of hypopharyngeal cut . After 10 days NG tube was removed and oral feeds were started. Baby was discharged after 21 days of antibiotics. Subsequent follow up of child showed gaining weight with normal growth and development .

Discussion

Gastric intubation, by oral or nasal route is an essential procedure in the management of sick infants, for gastric aspiration or feeding. A pharyngo-oesophageal perforation in a neonate can present with respiratory distress as a result ofperforation into pleural cavity with resultant pneumothoraxand infection , drooling, feeding problem or difficult nasogastric intubation . Radiologically, ectopic location of a feeding catheter, alone or in combination withevidence of air leak , is seen in the chest radiographs [3]. There have been several reports of neonatal pharyngo-oesophageal perforations. Most of these are iatrogenic and occur during resuscitation procedures viz endotracheal intubation, nasogastric tube placement and airway suctioning [4,5]. This perforation may also occur during assisted breech delivery or trans-oesophageal echocardiography [6].

The case we are reporting is also an iatrogenic complication however in a situation where no intervention was needed and purely a result of ritual and false beliefs. In many communities it is believed that by directly putting a finger deep in oropharynx and making the child cry loudly shall result strong voice in life.

Oesophageal perforation usually occurs in the cervical oesophagus at the level of cricopharyngeus muscle, most commonly involving pyriform sinus[7] .The oesophageal lumen is narrowest at this point and may get occlude by spasm or reflex constriction of the cricopharyngeus in response to injury or an offending agent [8,9].

Most authors agree that surgery can be avoided [10]. There is no difference in the reported rate of survival when treated medically versus surgically [11]. A nasogastric tube may be negotiated into the stomach under fluoroscopic control and nasogastric feeds started. An oral contrast study is performed after 7-10 days and oral feeds are started once healing of the esophagus is demonstrated.

In conclusion esophageal and pharyngeal perforation is a rare complication of modern NICU which can occur even in most experienced hands.A high index of suspicion in infants with sudden deterioration of respiratory status following procedures involving pharyngo esophageal region is essential for a timely diagnosis, which can be confirmed by radiological investigations .Conservative management with close observation for signs of complication can result in complete recovery. Preventive measures such as adequate training in intubation, use of more experienced staff for intubating extremely pre term infants, extra care during suctioning and high index of suspicion are required.

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Correspondence to:

Om Shankar Chaurasiya
Department of Paediatrics
M L B Medical College
Jhansi 284128
+91 9532376316
India

Email: chaurasiyaom@gmail.com
chaurasiyaom@yahoo.co.in
drvkumar1@gmail.com