

## Case Study

# Pediatric Nursing Care for Congenital Diaphragmatic Hernia

By

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Baby Endley was born in the Clara Swain Hospital, Bareilly. Birth weight was 6 lbs 8 ozs, and no congenital deformity noted at birth. He was discharged from hospital in good condition and was taking feeds well.

Ten days later the baby was brought to hospital with a bleeding cord. No other symptoms were present at that time. He was taking feeds well and had passed one stool.

On next day the child developed difficulty in breathing but was not cyanosed, but dyspnoea was gradually increasing and the child became very restless. X-rays, plain and after Barium Sulphate enema revealed a hiatus hernia through the left dome of the diaphragm with about 3 feet of colon lying in the left pleural space which had pushed the mediastinum to the opposite side. There was atelectasis of the entire left lung and this coupled with the cardiac embarrassment was responsible for the dyspnoea and cyanosis. The case was referred by our pediatrician to the thoracic surgeon who after carefully studying the advised left thoracotomy with repair of hernia.

The parents were told that the prognosis was grave but under the circumstances the only chance for survival lay in surgery. Being convinced of the truth of this they agreed and the child was posted for operation.

### Pre-operative Preparation

Oxygen was given to relieve dyspnoea and cyanosis. The infant was kept in the right lateral position as all the intestinal contents were on the left side. The infant was not taking feeds by mouth; so in order to maintain adequate hydration a hypodermoclysis of 60 c.c. glucose

in each thigh was given along with vitamin B. The back and abdomen were prepared. A breast feed was tried but not taken. However with the above measures the infant became quiet and restful.

Inj. Atropine Gr. 1/200 given before the patient was taken to the operating room.

### Operating Room

Endotracheal anaesthesia was decided upon.

At 8.30 p.m. the operation was started and completed at 11.30 p.m. The intestinal loops, which were viable, were returned to the abdominal cavity and the diaphragmatic defect repaired. The oedematous condition of the bowels and the condition of the child rendered the operation technically difficult and it speaks highly of the competency of the surgical team that they were able to succeed. Inflation of the atelectatic was attempted but was unsuccessful. Hypoplasia of the lung was thought to be present, and so a left pneumonectomy was performed. 50 c.c's of blood were given intravenously.

### Post-Operative Nursing Care

1. Oxygen continuously.
2. 25 c.c. blood I.V. given slowly by open method.
3. Child kept in warm bed.
4. Drainage tube from left chest was connected to bottle and suction started under carefully adjusted pressure.
5. Pulse, respiration and development of cyanosis were watched for carefully every 5 minutes throughout the night. Slight abdominal distension was noted. 10 c.c.s. of thin drainage fluid were obtained during the whole night from the opera-

tive wound.

The child slept fitfully.

#### First day

1. P. A. X-ray of chest taken.
  2. Barium left over from the previous enema examination was removed digitally to forestall the development of any intestinal impaction.
  3. Pencillin 200,000 units 6 hourly and Streptomycin  $\frac{1}{2}$  gram 6 hourly were given to combat infection.
  4. Levine tube was kept in to avoid distension, and suction was applied every hour.
  5. Every 2 hours a flatus tube was passed and left in for 15 minutes.
  6. Continuous oxygen inhalation given.
  7. No feeds were permitted by mouth.
  8. Clysis of 30 c.c. 5% glucose/saline was given in each thigh every 3 hours to supply fluid, the rapid absorption of which was facilitated by the concomitant use of Hyalase, a spreading factor derived from tissue extracts.
  9. Bowel sounds were listened for. In the evening the child passed flatus and had one tarry stool. The temperature remained normal and there was no abdominal distension. The chest drainage tube was removed as it was not needed.
- Auscultation of the lung by the doctor revealed a few basal rales on right side.

#### Second day

1. Breast feed tried, sucked for only 1-2 minutes, but took bottle feed well. Cry was normal, stool normal in colour and consistency.
2. Clysis 30 c.c. 5% glucose/saline given in each thigh.
3. Penicillin, Streptomycin and Cal. Pantothenate given, the last named, to prevent any ileus lesion.

#### Third day

Breast feeds taken well every 3 hours. Mother's milk was not enough so 1 strength Dumex was given after each breast feed. Mouth care carried out after each feed. Frequent stools produced anal excoriation for which zinc ointment was applied locally.

#### Fourth and Fifth day

Were uneventful, the patient maintaining progress.

#### Sixth day

Mild conjunctivitis treated with zinc eye drops. Stitches removed. The wound was raw and gaped slightly. General condition good. Penicillin and Streptomycin discontinued.

Progress maintained.

Final examination of the patient by the thoracic surgeon showed that the infant had made a very satisfactory and relatively uneventful recovery post-operatively. Function of lung adequate and the hernia eradicated.

#### Discussion and Conclusions:

Cases of herniation of abdominal viscera through congenital development defects in the diaphragm are known as hiatus herniae. They are relatively rare and their management difficult. The development of an atelectasis of the left lung produced by the herniated intestinal loops and the displacement of the mediastinum to the opposite side by the same force, produced cardio-respiratory embarrassment and shock. All these coupled with the dehydration rendered the management of the case extremely difficult. Without the services of a skilled and experienced thoracic surgeon the treatment of this case was impossible. The maintenance of endotracheal anaesthesia in such a case was beset by hazards and the adaptation of large sized equipment to an infant called for ingenuity and skilled supervision. The reduction of hernia and repair of the defect and total ablation of the left lung was successfully completed. Fluid replacement and pain-taking nursing care were called for post-operatively. Ian Aird of England states that post-operative the mortality is about 80-90%. This is due to the presence of other congenital anomalies which turn the scales against survival. The absence of any such anomalies and good nursing care was responsible for the eventual cure of the patient.