BE PREPARED FOR THE UNTOLD

- A CASE OF CONGENITAL DIAPHRAGMATIC HERNIA

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UNDER THE GUIDANCE OF GUIDE:

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CASE HISTORY

- A 28yr old healthy Gravida 2,Para 1,Live 1 not previously registered with DY PATIL HOSPITAL had come for counselling with latest antenatal scan at 35weeks of gestation showing findings suggestive of (Left sided congenital diaphragmatic hernia) and with previous anomaly scans at 21weeks normal
- It was a non consanguineous
- Previous lower segment Cesarean section in view of pre eclampsia ,baby is live and well
- Present pregnancy was a spontaneous conception and no history of any comorbidities in the mother
- No h/o any congenital anomalies in the family
- No history suggestive of any teratogen intake in mother

ANOMALY SCAN

- Single live intrauterine gestation at 21.4 weeks
- Estimated fetal weight:444gms
- Bilateral mild pyelectasis
- Amniotic fluid index: adequate(11cm)
- No anomalies were detected

LAST ANTENATAL SCAN AT 35 WEEKS

- Single,live,gestation of 35weeks 1day maturity
- Left sided congenital diaphragmatic hernia
- The stomach and colon was seen to lie in the left hemithorax.
- Spleen was not appreciated
- The left lung appeared small and compressed ,the right lung appeared normal.
- Head circumference -321mm
- Lung area by tracing method-759mm2
- LHR(LUNG HEAD RATIO)=2.3 (LHR>1.4 indicates good prognosis)

ANTENATAL COUNSELLING

- Antenatal counselling was done by :-

- HOD of obstetrics department(DR H Deshpande) to plan the delivery after discussing with the Neonatologist and Paediatric surgery team.
- Neonatologist (DR Sudhir Malwade sir) had counselled about the condition likely outcome, immediate management post delivery and long term outcomes,

- The need for NICU admission , ventilatory support and surgical procedure was explained by Paediatric surgeon(DR Pranav Jadhav sir Hod of Paediatric surgery)

NATAL AND POSTNATAL DETAILS

- A Male baby with a birth weight of3.2kg was delivered at TERM via a lower segment cesarean section

- The baby cried immediately after birth and no resuscitation was required.
- Shifted to NICU

- In NICU:
- The baby was initially taken on O2 by hood and then was electively intubated in view of possible persistent Pulmonary hypertension

- Started on minimal inotropes and prophylactic cover of antibiotics were given

GENERAL AND SYSTEMIC EXAMINATION

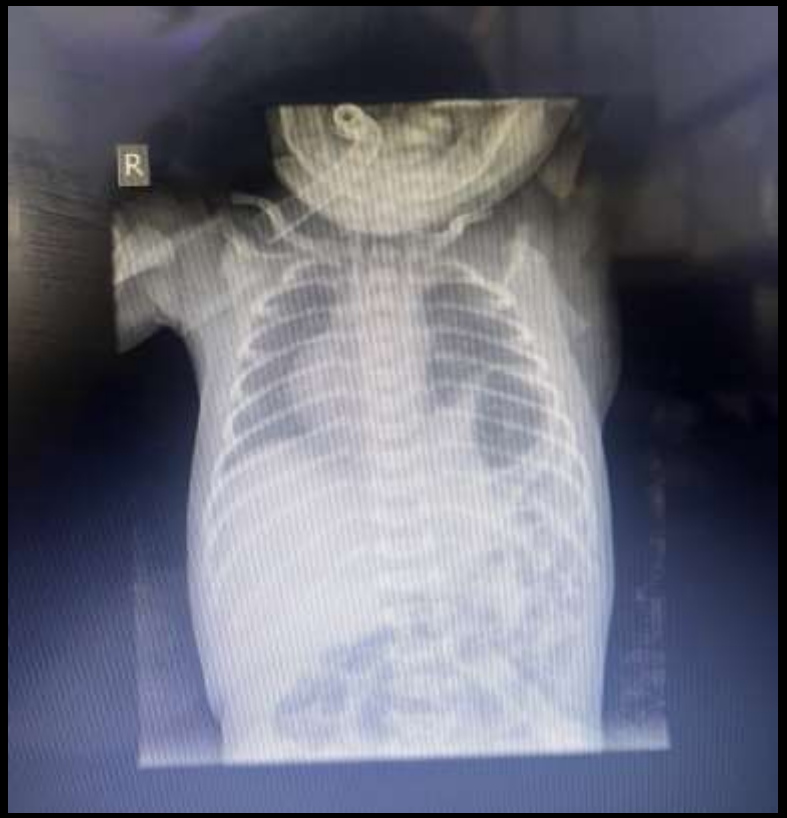
- ON EXAMINATION
- There was no obvious dysmorphism
- HR:150/MIN

He was ventilated on SIMV (PS+PC)mode with a set rate of 30breaths/min ,IE time of 0.3 with I:E 1:1.2

- He was normothermic in warmer with a set temperature of 36.5c

- SYSTEMIC EXAMINATION: Normal

CHEST XRAY ON ADMISSION



Mediastinal shift to right side no dextrocardia
No continuity in diaphragm ,presence of fundal gas shadows in left hemithorax with collapse of left Lower lung lobe

SCREENING

- USG(ABDO+PELVIS);
- Left dome of diaphragm was not seen
- Ng tube was seen in thoracic cavity normal in size, shape and echotexture
- Spleen appears normal

- USG THORAX:
- s/o Left sided diaphragmatic hernia

SCREENING

- USG CRANIUM:
- NORMAL STUDY

- 2D ECHO;
- Small ASD -left to right shunt
- small PDA
- mild PAH with mild TR
- Good LV RA function

SURGERY

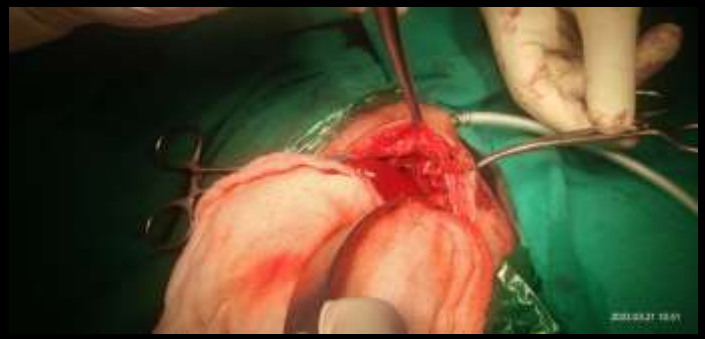
Baby was taken up for surgery by paediatric surgery team

INTRAOP FINDINGS:

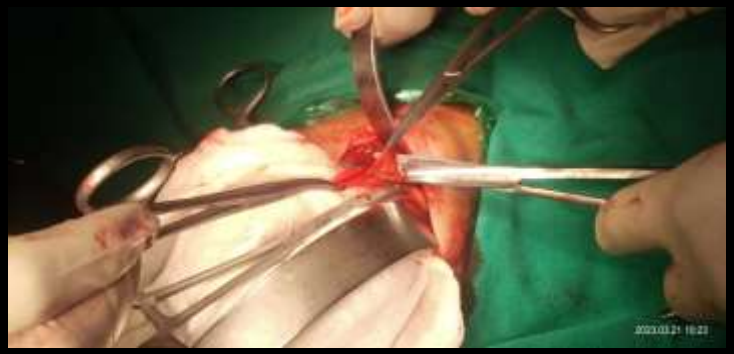
- Left diaphragmatic eventeration
- Left diaphragmatic hernial sac noted
- Anterior rim of diaphragm deficient
- Absence of malrotation of gut

SURGICAL PROCEDURE

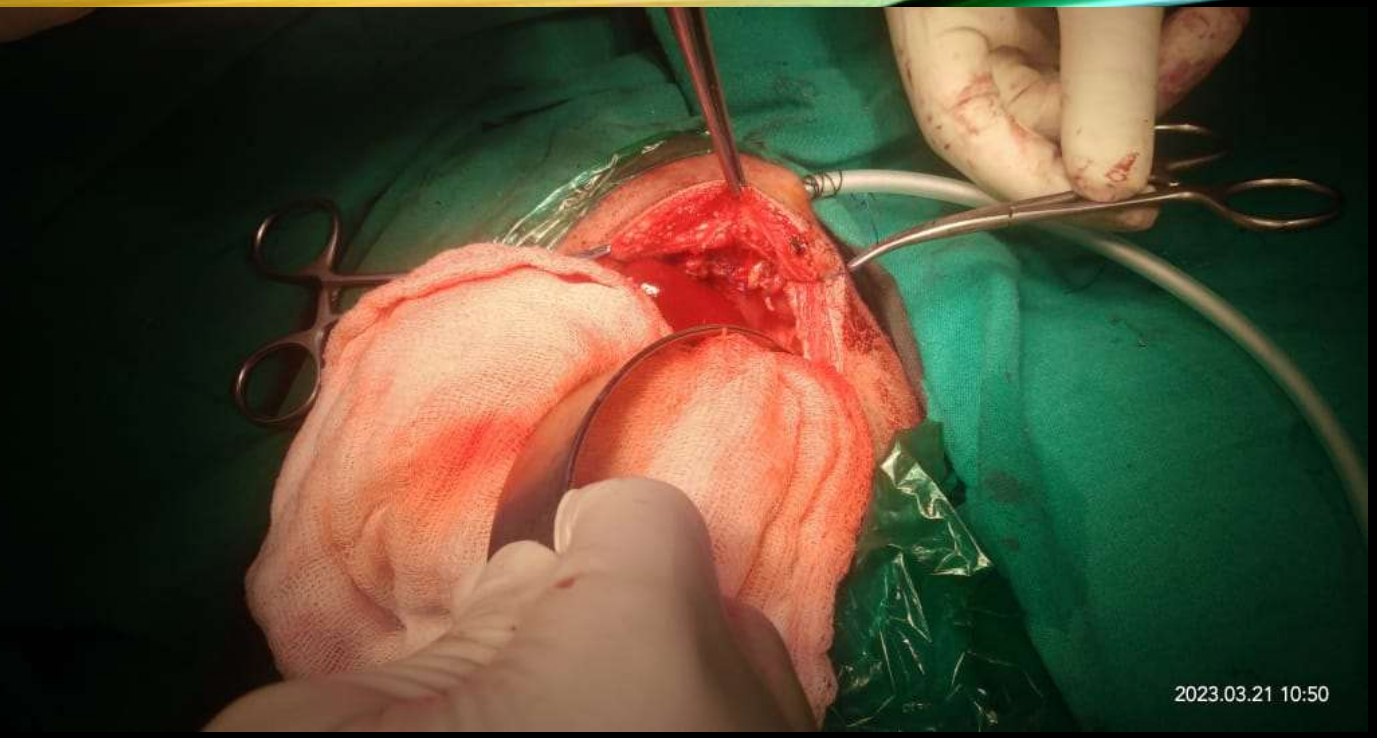
- Left diaphragmatic hernial sac resescted till rim of muscular diaphragm,plication of diaphragm done and ICD placed insitu
- Insicion closed in layers

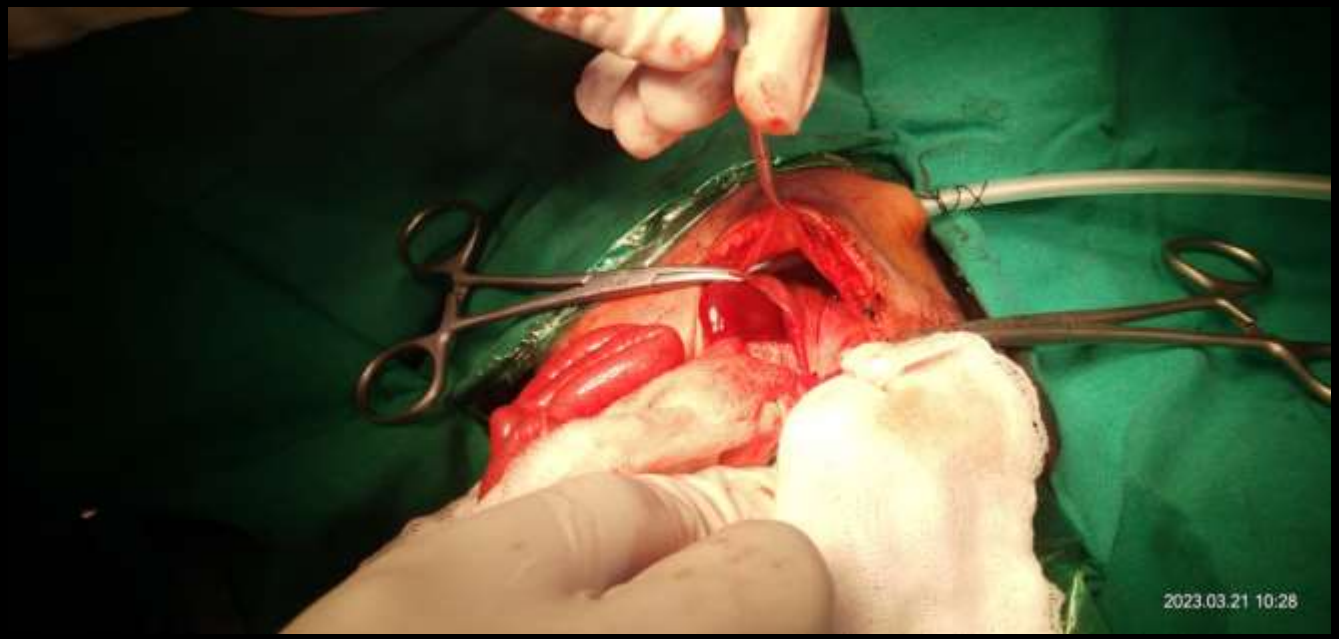


DEFECT



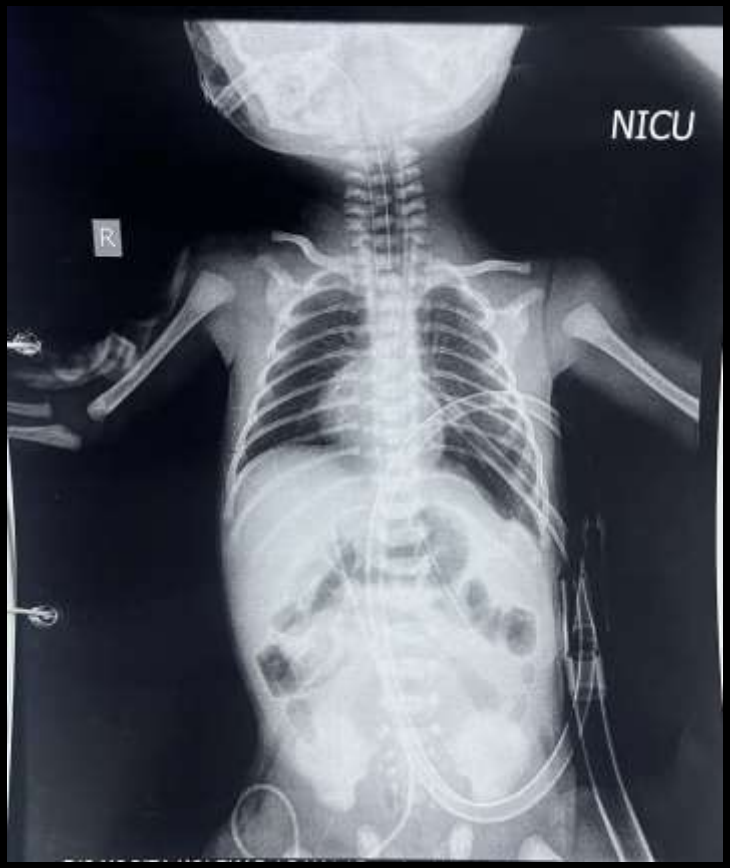
PROCEDURE





PROCEDURE

POST-OPERATIVE XRAY



POST-OPERATIVE PERIOD

- Baby was ventilated for 9 days
- Thoracic drain was removed on day 10
- Extubated on post operative day 9 and taken on HFNC following which oxygen support was gradually weaned off and he was taken on room air on post operative day 13

POST OPERATIVE PERIOD

- Feeding was started (expressed breast milk) via OGT on post operative day 10 and was gradually graded up and eventually started on watispoon feeding and exclusive breast feeding

- Baby was discharged on post op day 18 after hearing screening was done ,mother was trained for KMC

- Post discharge medications were explained and developmentally supportive care was also explained to her

SCREENING PRIOR TO DISCHARGE

- OAE was done for the baby prior to discharge
  RESULT:both ears pass
- As hearing loss is a long term morbidity which can occur as a result of Persistent pulmonary hypertension and require early identification and intervention.
- Since congenital diaphragmatic hernia could be associated with other anomalies

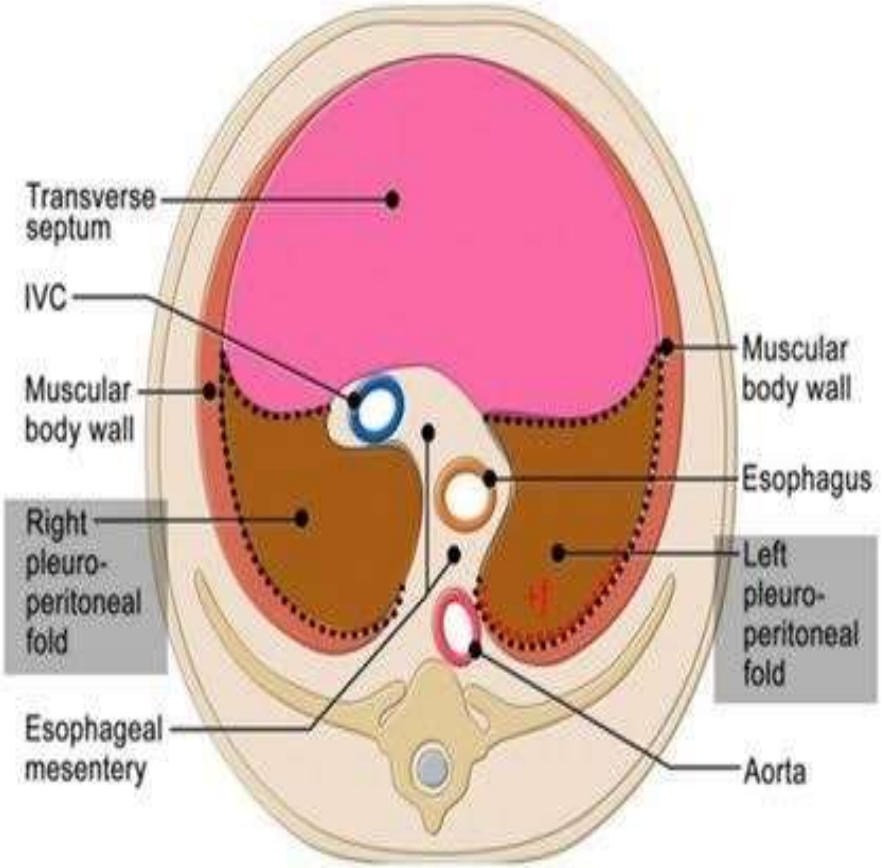
FOLLOW-UP

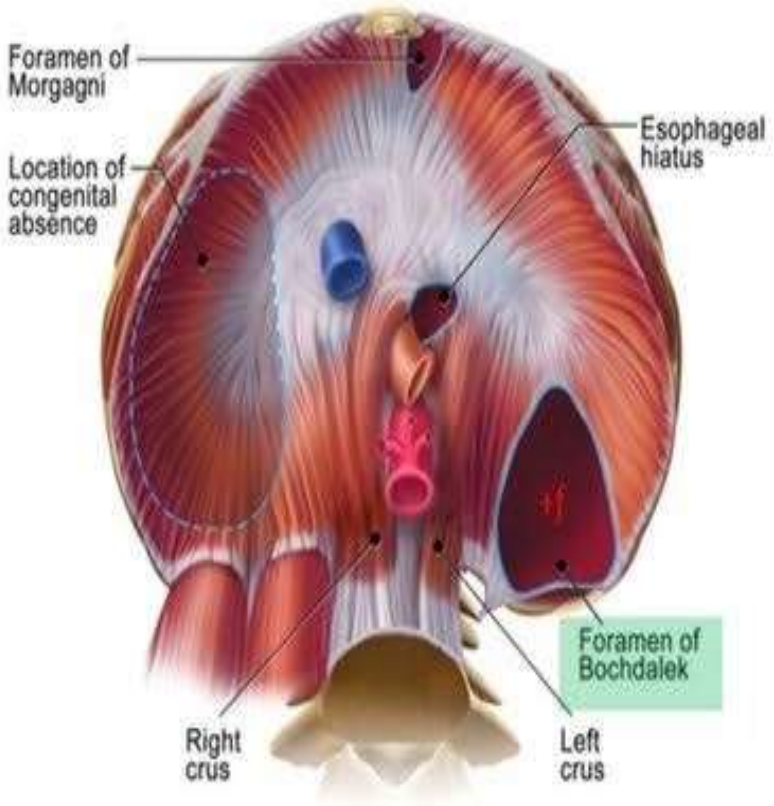
- Baby had come for follow up 10days after discharge
- Weight gain:135gms
- Accepting exclusive breast feeds

- Second follow up;
- Weight gain of 260grams
- Good fixation of eyes
- Developmentally appropriate for age

LITERATURE

- Postero lateral or Bochdalek Hernia is the most common type and predominantly left sided
- Presence of liver in hemithorax-determinant of poor survival rates
- Early appearance of CHD and poor lung head ratio <1.3 suggests poor prognosis and lesser survival rates
- And LHR <0.6 +no survival





- Morgagnian(anterior and medial)hernias are much less frequent and may be associated with other cardial,sternal,and abdominal defects as a part of Pentology of Cantrell Spectrum

LONG TERM MORBIDITIES

- Some of the long term complications that could occur:
- Gatroesophageal reflux disease
- Failure to thrive
- Tube feedings are common
- Obstructive lung disease is the most common finding in later childhood

FACTORS ASSOCIATED WITH INCREASED MORTALITY;

- Early antenatal identification-more severe CHD since mediastinal shift is more pronounced
- A low 5 minute APGAR score has been associated with decreased survival as it reflects early cardiorespiratory compromise due to severe lung hypoplasia
- Presence of liver in hemithorax suggests bad prognosis

SYNDROMES ASSOCIATED WITH CHD

- Aneuploidy m/c TRISOMY 18
- Autosomal recessive(Fryns syndrome)
- Sex linked(Simpsons behmel syndrome)

POINTS TO LEARN

- Antenatal counselling played an important role , which enabled the parents to deal with it emotionally and the faculty could manage the case well
- Congenital diaphragmatic hernia that doesn't appear early during gestational age predicts a better prognosis
- All anomalies scan should mention about lung head ratio.
- Lung head ratio of >1.3=signifies better survival rates
- LHR<1 had a bad prognosis and fetus should be screened for other congenital anomalies and appropriate counselling should be offered to parents
- Emphasis on hearing screening and screening the other associated congenital anomalies
- all babies with CDH should be enrolled in developmental clinic

NEONATAL SURGERIES

- On an average 15 -20 neonatal surgeries are done in a year
- Out of which 5-6 are Tracheo oesophageal fistulas and 2-3 are Congenital diaphragmatic hernias with good outcome
- No deaths of surgical babies last year

- THANK YOU