




**A TWO YEAR OLD CHILD
POSTED FOR THORACOTOMY
WITH DECORTICATION.**

**PRESENTER : fppt.com
DR. ANKIT SAWHNEY
JR-III**

HISTORY

- My patient was brought to the hospital with chief complaints -

- 1) Fever
 - 2) Difficulty in breathing
 - 3) Productive cough
 - 4) Irritability
- } 7 days

- 
- On admission, she was found breathless and was unable to maintain normal range of O₂ saturation.
 - Air entry was decreased over left lung fields.
 - A diagnosis of Pneumonia was made and she was started on treatment with IV antibiotics.
 - On the 2nd day, child developed respiratory distress associated with use of accessory muscles of respiration. So she was intubated and put on mechanical ventilation.



PAST HISTORY

- 6 months ago, she had similar episodes of fever with cough for a period of 1 week, for which she was hospitalised and treated with antibiotics while being admitted for a duration of 7 days.

PERSONAL HISTORY

- Bowel & bladder habits normal
- Sleep disturbed



BIRTH HISTORY

- Full term, Normal vaginal delivery
- Birth weight – 2.9 kg
- Cried immediately after birth
- No delay in achieving developmental milestones.
- Immunisation status up to date .

FAMILY HISTORY

No significant history given.

GENERAL EXAMINATION

- Female child, average built
- Weight- 9.2 kgs
- Poor general condition
- Intact skin turgor
- Pallor present.
- No Icterus, Cyanosis, Oedema or palpable Lymphadenopathy.



GENERAL EXAMINATION CONTD..

- Peripheries warm
 - Pulse rate – 132 beats/min, good volume
 - BP – 98/58 mm of Hg
 - Resp. rate – 24/min
 - SpO₂- 96% on FiO₂ 50%
- } On mechanical ventilator

SYSTEMIC EXAMINATION

- RS – Air entry decreased over left lung
(Lower >>> Upper)
ICD (size 20) insitu on left side of chest,
with column moving
- CVS – S₁ S₂ heard normally , no murmurs
- P/A – Soft, non tender, bowel sounds present
- CNS – Sedated, kept intubated on ventilator



INVESTIGATIONS

HB- 11.8 G %	TLC- 14,600 / CUMM	PLATELETS- 4.6 LAKH/CUMM	BLOOD GROUP- B POSITIVE
--------------	--------------------	-----------------------------	----------------------------

LFT	S . BILIRUBIN	TOTAL	0.33 MG%
		DIRECT	0.25 MG %
	SGPT	17 IU/L	[0-40 IU/L]
	SGOT	8 IU/ L	[5-35 IU/L]
	S.ALP	92 IU/ L	[15-112 IU/L]

RFT	BLOOD UREA	22 MG%	NA+ -143 M MOL/L	BT- 1 MIN , 48 SEC
	SERUM CREATININE	0.3 MG %	K+ - 3.9 M MOL /L	CT – 4 MIN . 50 SEC

ABG	PH	7.44
	PACO ₂	34
	PAO ₂	108
	HCO ₃ ⁻	20.2
	SAO ₂	97%

INR	1.0
PT	13.6 SECS

RBS	101 MG %
-----	----------

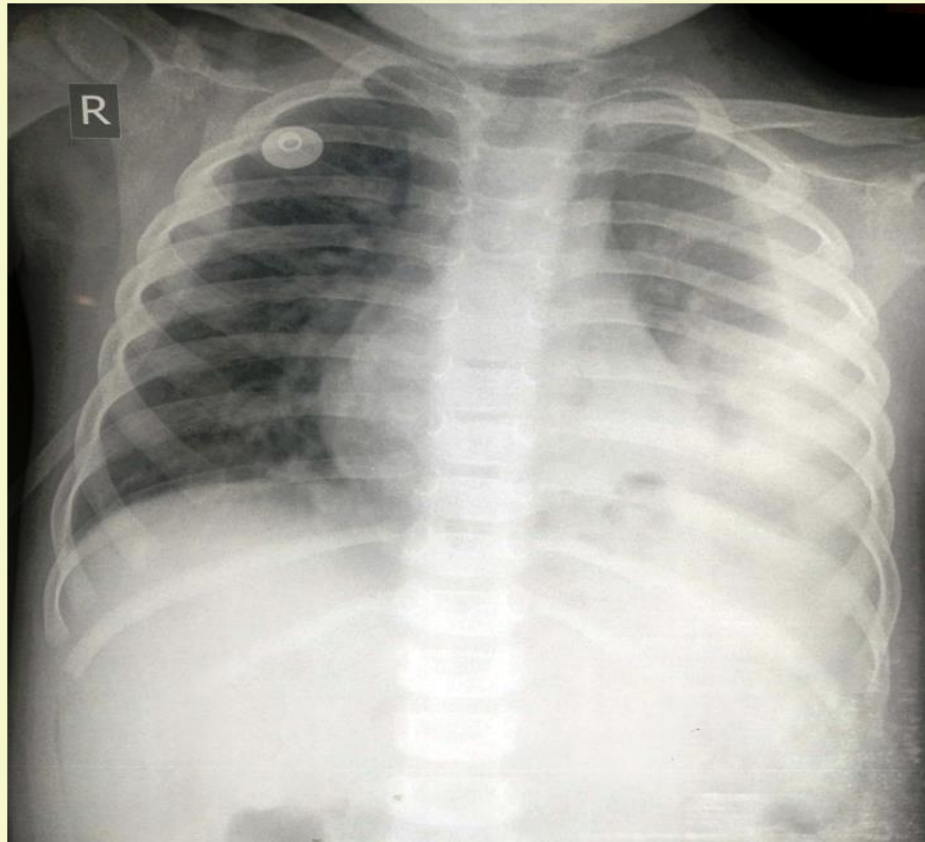
OTHER INVESTIGATIONS

- ECG - Sinus tachycardia
(~140 beats/min)



- USG chest – Moderate left side pleural effusion with underlying consolidation in lower zone. No evidence of pleural effusion on right side and B/l diaphragmatic movements appear normal.
- 2D Echo - 60% EF with normal cardiac blood flow

- CXR - Left side pleural effusion with basal lung collapse and patchy opacities s/o consolidation in the lower lobe.



DIAGNOSIS

2 years old female child brought with
repeated complaints of fever, cough & difficulty in breathing;
investigated and diagnosed to have
Pneumonia with pleural effusion & consolidation
(Left lower lobe)
posted for elective Thoracotomy and Decortication.

Anesthetic challenges

- ① Pediatric age group
- ② Effects of position of the patient during surgery (Right lateral)
- ③ Intraoperative Hemodynamics
- ④ Hypoxia, hypercarbia and hypotension.
- ⑤ Any stress response due to hypercapnoea during elective apnoeic ventilation.
- ⑥ External compression of major airways, while positioning.
- ⑦ Well versed with the technique to provide one lung ventilation, if required.
- ⑧ Readiness to replace the blood loss in case of any major vessel injury.

ANAESTHETIC MANAGEMENT

- Patient was brought intubated from the PICU, with 4.5 size micro-cuffed ET tube, on AMBU ventilation.
- JR circuit was attached and patency & positioning of the ET tube was confirmed.



- Warming blanket was used to prevent hypothermia.
- Patency of IV canula confirmed and IV fluids started.
- ECG, Pulse oximeter, NIBP cuff & etCO₂ probes were attached.



PRE OPERATIVE VITALS

- ✓ PR- 126 beats/ min
- ✓ NIBP- 80/60 mmHg
- ✓ RR- 20/ min
- ✓ SpO₂- 97%
- ✓ Temp- 37. 2°C



ANAESTHESIA

- ▮ Type of surgery planned and risks associated
- ▮ Intra operative haemodynamic stability
- ▮ A pain free recovery
- ▮ Good post operative pain management

We planned to give **combined General + Epidural anaesthesia**

- ✓ **Premedication** -- Inj. Glycopyrrolate 0.04mg/kg, inj. ondansetron 0.1mg/kg, inj midazolam 0.02mg/kg and inj. Fentanyl 2mcg/kg was given.
- ✓ **Induction** -- Inj. Propofol 1.5 mg/kg and inj vecuronium 0.1mg/kg was given.
- ✓ Anesthesia was **maintained** with O₂ & **intermittent** N₂O (40:60) alongwith sevoflurane, on IPPV with JR circuit.

ANESTHESIA MANAGEMENT CONTINUED...

- Temperature probe was fixed intranasally.
- Peripheries were covered with gamjee rolls and the scalp was adequately covered to prevent hypothermia.



- Under all aseptic precautions, a 19G Tuohy's needle was inserted in the T12-L1 intervertebral space.



- Epidural space was achieved at 10mm depth with loss of resistance technique using 0.9% normal saline.
- Catheter was fixed at 7cm mark.
- 5ml of 0.25% Bupivacaine was given through the epidural catheter and the hub was wrapped in sterile dressing and secured.

INTRA-OPERATIVE VITALS

❑ Incision was taken in left 4th IC space.

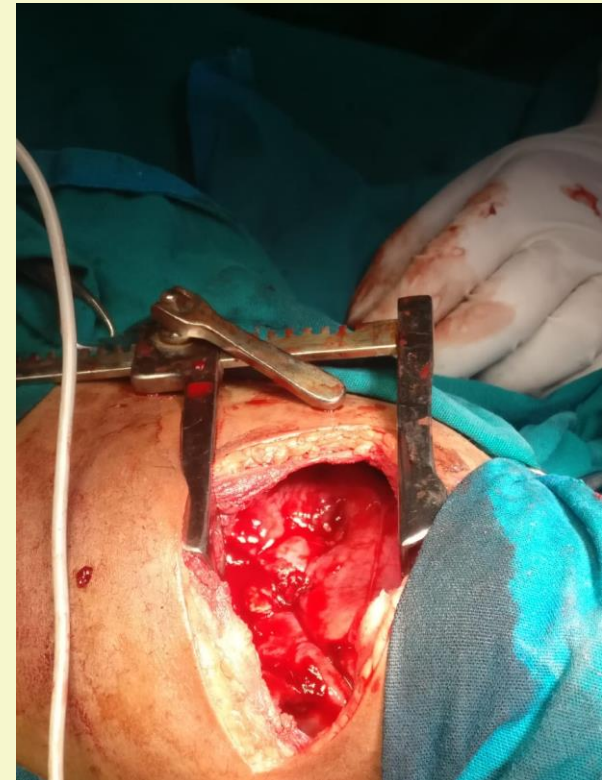


- ✓ PR : 130-150 beats/min
- ✓ SBP : 80 to 100 mm of Hg
- ✓ DBP : 55 to 75 mm of Hg
- ✓ SpO₂ : 96- 100%
- ✓ etCO₂ : 38 to 42 mm of Hg
- ✓ Temperature : 36.5°C to 37.5°C

- By the end of surgery, the collapsed lung had started to inflate adequately and the O₂ saturation came up to and was maintained at 100%.



**Collapsed lung
with infected Slough
Leathery pleural surface**



**Well inflated lung
with healthy lung tissue**

- An ICD was inserted in the left 5th intercostal space, at anterior axillary line.



- Patient reverted back to supine position.
- **ABG** was done
- Reversal of anaesthesia was given with Inj. Neostigmine 0.05mg/kg + Inj. Glycopyrrolate 0.008 mg/kg.
- Patient was extubated after spontaneous & good respiratory efforts were noted.

INTRA OPERATIVE DETAILS

- Surgery lasted for 1 hour 20 minutes.
- An epidural topup of 5 ml, 0.125% Bupivacaine was given just before shifting the patient.
- Ringer Lactate - 80ml (As the children are kept on recommended maintenance fluids during fasting hours)
- PCV- 150ml given.
- Total blood loss- 150ml
- Total urine out put- 20 ml
- Patient shifted to PICU on O₂ @ 2 lit/min

POSTOPERATIVE CARE/ PICU

- 2 Epidural top ups of 5ml each, 0.125% Bupivacaine, were given 1st 6-8 hours postoperatively in the evening and 2nd on the next morning, followed by removal of the catheter under vision under all aseptic precautions.
- Patient was stabilized and shifted to ward on POD₄.





Pre operative Chest Xray



Post operative Chest Xray

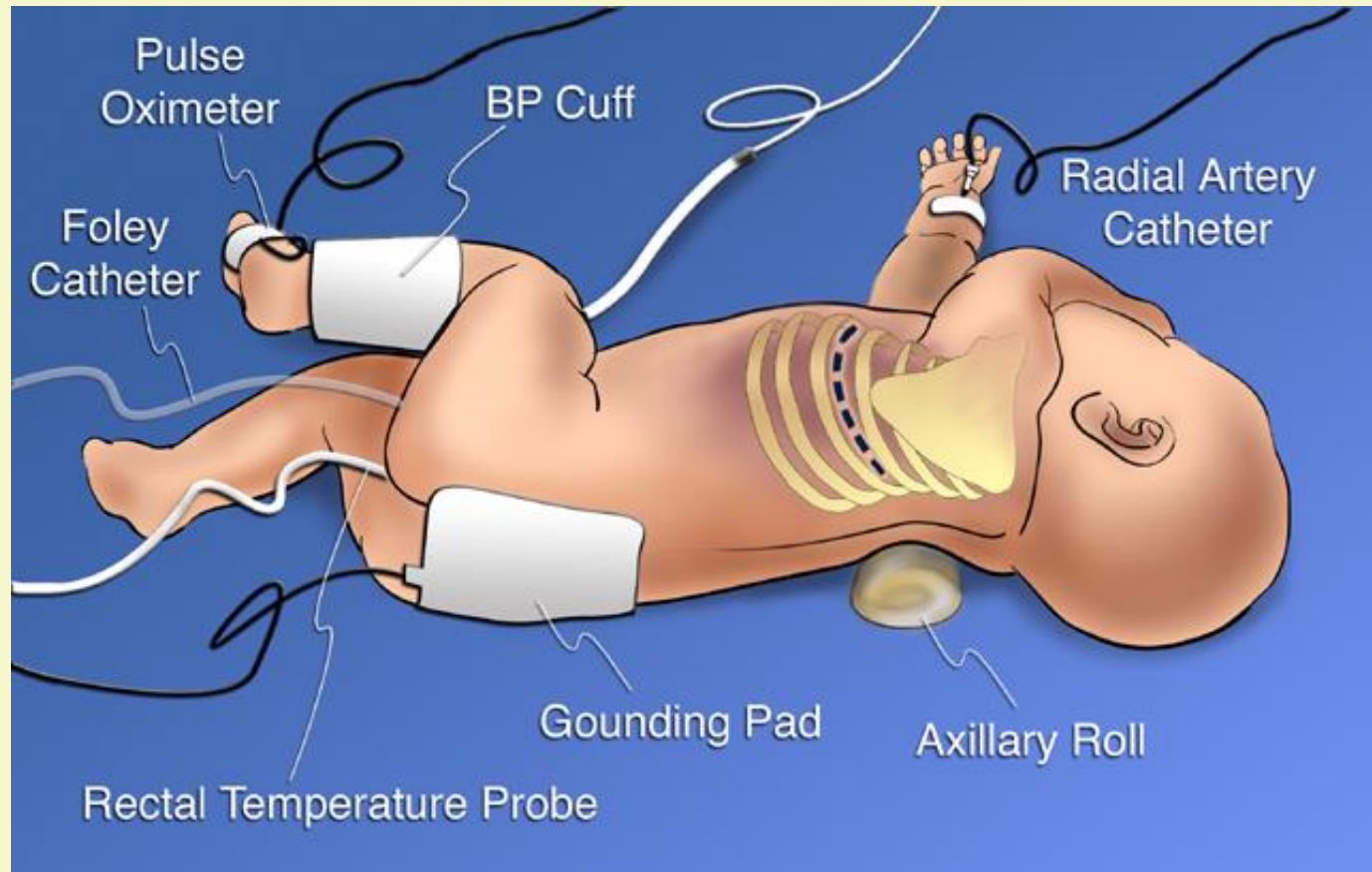


DISCUSSION

Epidural..!!!



Position..!!!



Ventilation..!!!

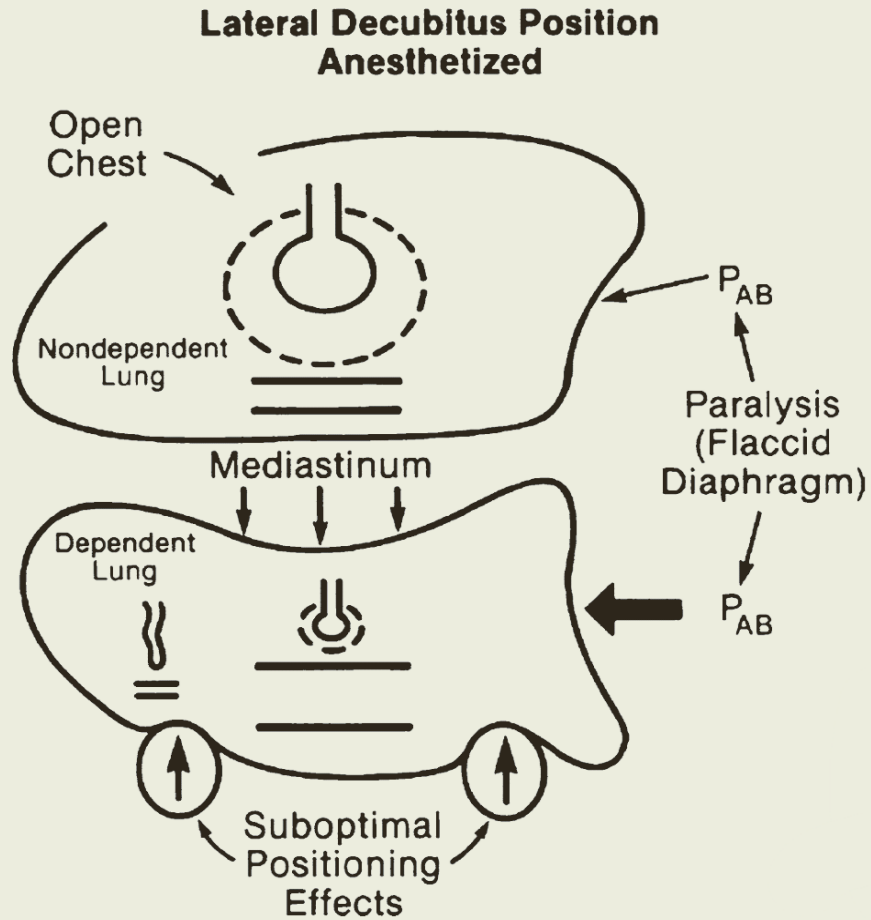


FIG. 5.12. Schematic summary of ventilation–perfusion relationships in the anesthetized patient in the lateral decubitus position. P_{AB} transmitted abdominal pressure (modified from Benumof [2]. © Elsevier 1995).



Thank
You