Seed GLOBAL HEALTH

Project ECHO

Approach to a Child with Respiratory distress

CASE PRESENTER: DR. AHIMBISIBWE J

Brief History

M.J, 3months/F referral from Arua RRH presents to ACU with DIB x 10wks. Initially noticed by the mother since birth but got worse in her 2nd wk of life, has been progressive, associated with occassional dry cough and difficulty in breastfeeding, intercostal recessions, nasal flaring and occasional bluish discolouration when off O2.

Primary Survey (Emergency Assessment)

Airway	Patent
Breathing	In distress RR-62b/m, hyperresonance(Rt), reduced air entry on(Rt) SPO2-81% on room air
Circulation	Warm peripheries, CRT<2sec, Tacycardic at 151b/m, Heart sounds S1, S2, Normal no added sounds, No murmurs

Primary Survey (Emergency Assessment)

Disability	AVPU=V, PEARL 3mm RBS-5.1mmol/L Soft neck, nornotensive fontanelles, no FNDs
Exposure	Afebrile T=36.3^{0}C, no conjuctival pallor or cyanosis with some dehydration

Poll 1

From the history and primary survey, what is the most eminent emergency in this patient?

What are BEDSIDE priorities?

THREATS	*PRIORITY*	*Findings*	*Associated Risk*
B	Severe Respiratory Distress	RR-62b/m SPO2-81% ra Hyperresonance(Rt) Reduced air entryRt	Respiratory failure Neuromuscular fatigue Hypoxic cardiac arrest

And always reassess to monitor response to treatments

Poll 2

Based on the above information, what are your

Management options for

this patient?

What happened in the ACU to stabilize the patient?

- Oxygen therapy 2L/min
- Positioning
- Blood taken off for investigation

This bought the team some time to find out more information

SAMPLE History

Signs & Symptoms	Difficulty in breathing, use of accessory muscles of resp, nasal flaring and bluish discoloration whenever off oxygen. This was associated with chest indrawing and feeding difficulties
Allergies	None
Medications	Antibiotics(unspecified on referral note), Oxygen therapy

SAMPLE History

Past Medical History	Has been admitted since Week 2 of life, O2 dependant at the referral facility, mostly being treated for pneumonia and bronchitis. Mother/baby sero negative.
Last Oral Intake	1 hour prior(breastfeeding)
Events Leading Up to Presentation	Worsening DIB, despite being on treatment, need for specialized care hence referral

Secondary Survey (Head-to-toe examination)

RELEVANT POSITIVES	RELEVANT NEGATIVES
CNS:Drowsy CVS: Tachycardic 151b/m	Fontanelles soft, no fever Brisk CRT, no pallor
RS: Asymmetrical chest, hyperresonant(Rt), Reduced air entryRt	Trachea central
P/A:	Soft, non tender, no palpable masses

Now before we investigate this patient, what are our differentials?

What are all the possible differentials we need to look for?

Category	Differential
Infectious	Pneumonoia, bronchiolitis, Aspiration
Congenital	Acyanotic CHD, Congenital lung malformations
Pleural disorder	Pneumothorax
Autoimmune	Asthma

Bloods

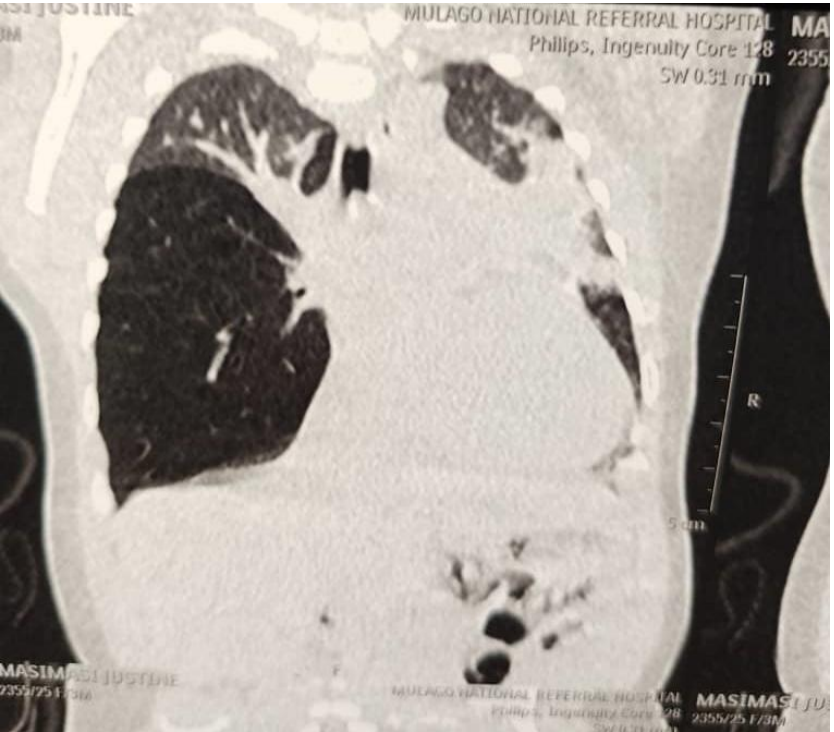
Investigation	Result
Full Blood Count	**WBC-4.85(L), Monocy(H), Basoph(H)** HB-11.7g/dL(N), RBC count(H) PLT-216(N)
Malaria Blood Smear	No MPS seen/HPF
Random Blood Sugar	*5.1mmol/L*
LFT	**AST-51(H)**, ALT-18(N), **ALP-403(H)** TP-57(L)
Electrolytes, Creatinine	Na-136(N), K-4.70(N), Cl-96.6(N), Cr-13(L), Ur-1.1(L)

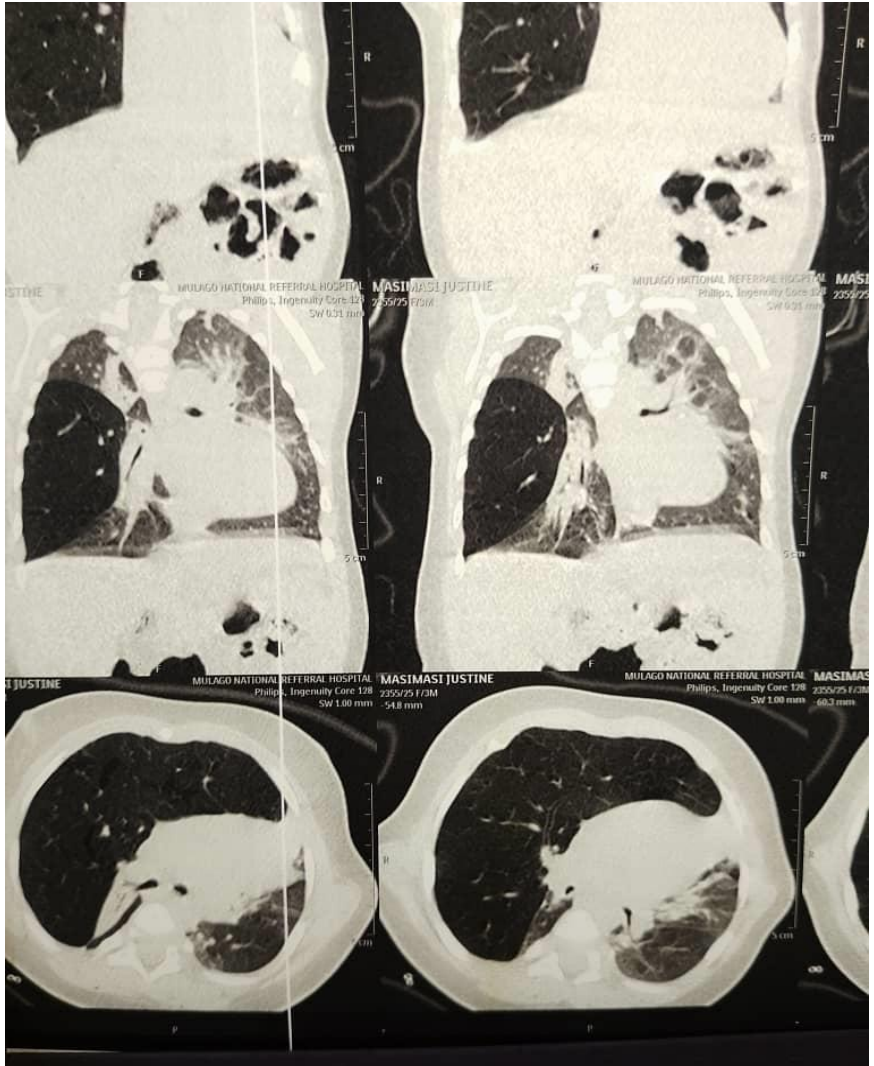
IMAGING

Lung ultrasound	Normal lung findings, no pleural or pulmonary pathology or pneumothorax
Cardiac ECHO	Mild TR, RVSP 2/3 systemic, severe PHT secondary to primary pulmonary disease
CXR	Hyperlucency of Right middle lobe with attenuated pulmonary vasculature, with splaying of ribs(Rt)

CHEST CT SCAN

- What do you see?





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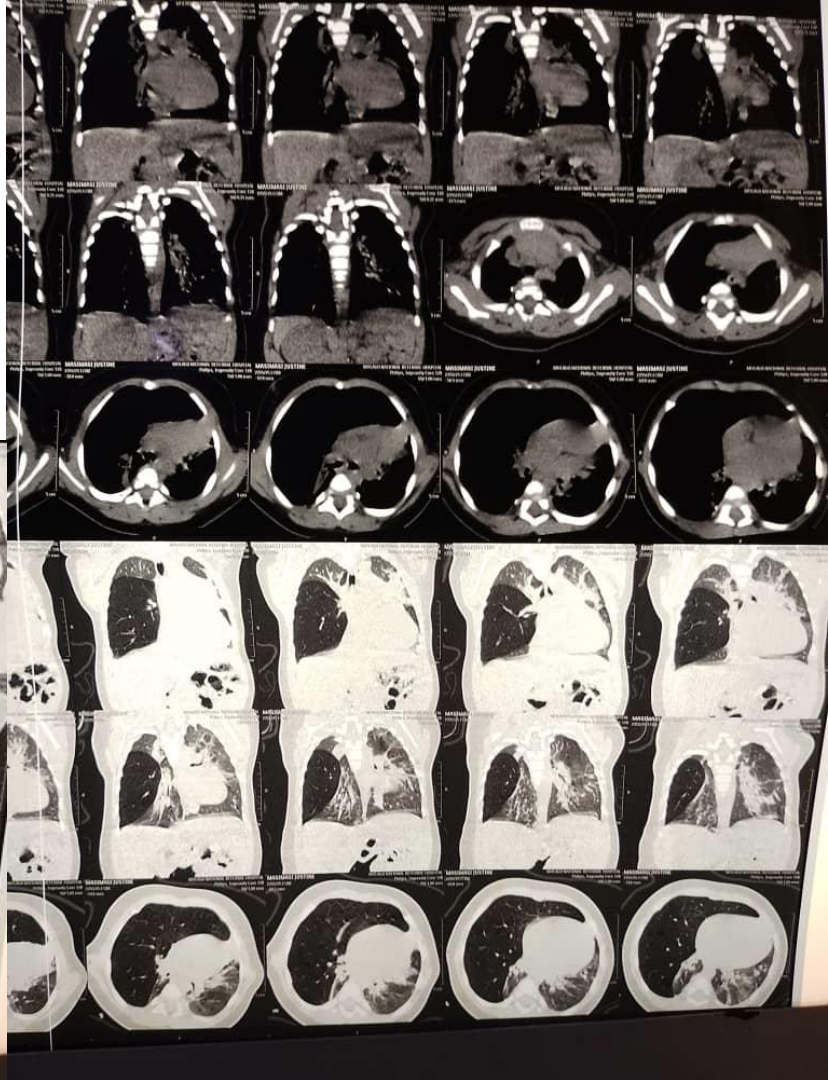

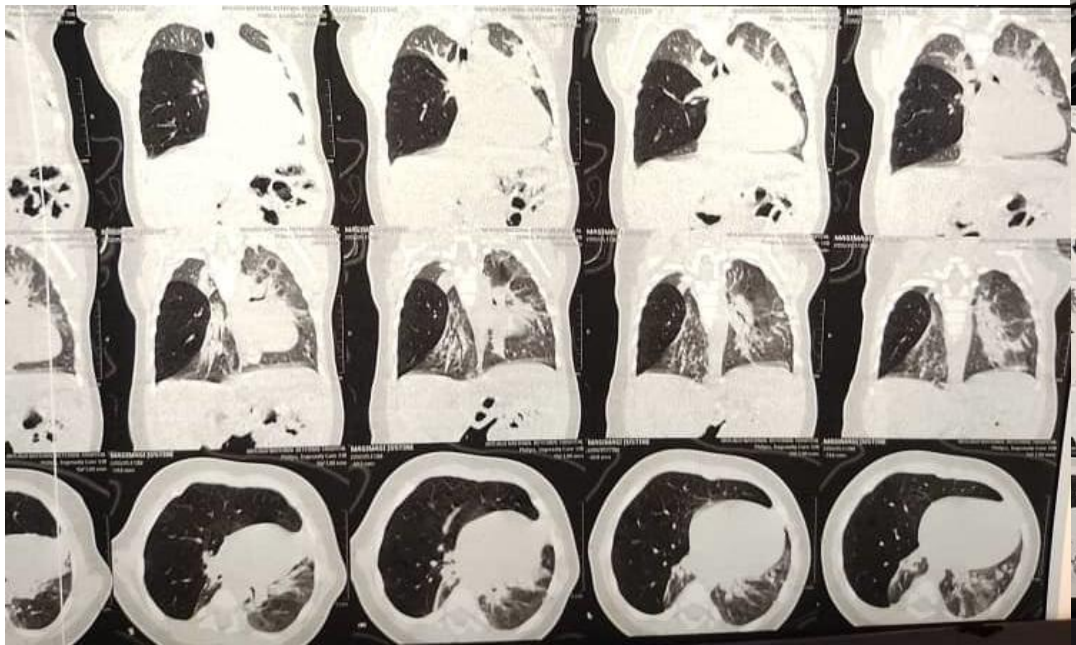

Poll 3

On investigations

Diagnoses

Congenital Right(middle) Lobar Emphesema

Compression atelectasis(Rt) upper/lower lobes

Severe Pulmonary HTN 2^0 Primary lung disease(CLE)

Poll 4

What are the 3 top priorities

Management options for

this patient?

Supportive Management

1. Positioning the baby
2. Oxygen therapy
3. Nebulization with salbutamaol
4. NGT for feeding(Expressed BM)
5. Intravenous fluids(+/-)
6. Monitoring SPO2, RR, Investigations

Specific Management

Consult CTS, Paed Anaesthesia, Pediatric pulmonology, PICU

Operative MGT(Lobectomy)

Disposition & Follow-up plan

Ward 16C,
CTS Review, Surgery
PICU

Nursing team:

Is there anything else you would like to know now?

What are the **nursing priorities**
for this patient during their inpatient stay?

Now, let's dive into Acute & Critical Care Management of this child's condition

How should you approach this patient as an ED doctor?

Thank you