


1-1-2020

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Recommended Citation

Sauparna, Dey and M D, Dr. Ravi (2020) "A Case of Right Lower Lobe Lung Abscess with Stage III Empyema," *Digital Journal of Clinical Medicine*: Vol. 2: Iss. 2, Article 9.

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A Case of Right Lower Lobe Lung Abscess with Stage III Empyema

Dey Sauparna, Dr. Ravi M D

CLINICAL HISTORY:

A 5 yr old female child, hailing from Mandya, came with history of cough and fever since 2 weeks.

Child was apparently normal 2 weeks back following which she developed cough, insidious in onset, gradually progressive, sputum not blood stained.

He also gives a history of fever, continuous, high grade.

No history of respiratory distress.

No other significant history.

No known congenital anomalies.

No history of previous surgeries.

EXAMINATION AND INVESTIGATIONS:

GENERAL PHYSICAL EXAMINATION: A female child, cooperative, moderately built and well nourished, appears well oriented to time, place and person.

VITALS:

BP: 100/70 mmHg

PR: 140 beats/min

RR: 50 breaths/min

SpO₂: 90% at room air.

No pallor, icterus, cyanosis, clubbing, oedema or generalized lymphadenopathy.

RS- B/L AE+

Right side air entry reduced. Right course crepitus present.

PER ABDOMEN-Soft, non-tender.

CVS: S1, S2 heard. No murmurs.

CNS: No focal neurological deficit

EXTERNAL GENITALIA: Normal

BLOOD INVESTIGATIONS:

HB: 11.3gms/dl

TOTAL WBC:20880 cells/ml

DLC:

N:76.6%, **L:**18.4%,

E:0.4%, **M:**4.4%, **B:**0.2%

RBC: 4.14 million/ml

PCV/HCT: 35.1%

MCV:84.8fl

MCH:27.3pg

MCHC:32.2 gm/dl

RDW-CV:14.8%

PLATELET: 6.98lakh/ml

BIOPSY (SMALL SIZE <2cm)

Right lung sloughed out tissue

MACRO: Specimen consists of multiple grey white membranous tissue. Fragments altogether measure 5×3.5 cm (all embedded).

MICRO: Sections show sheets of inflammatory cells consisting predominantly of neutrophils and few macrophages. Karyorrhectic debris, areas of haemorrhage and granulation tissue seen. No granulomas seen in the sections studied. Features are suggestive of acute suppurative inflammation.

CHEST X RAY:



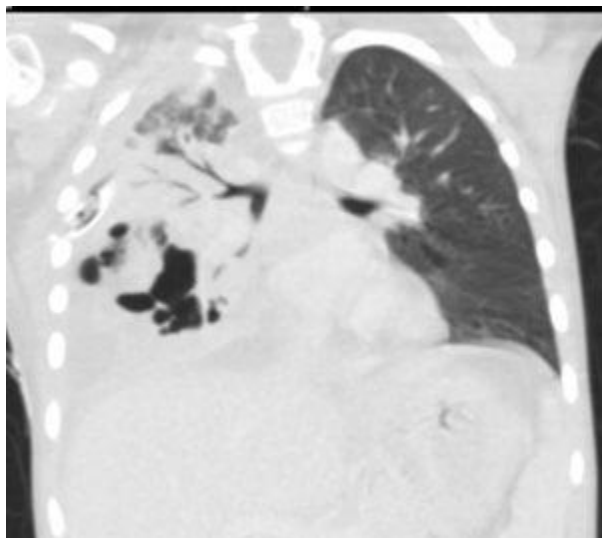
AT THE TIME OF ADMISSION



AFTER TREATMENT



CECT THORAX



CECT THORAX

SURGERY: RIGHT DECORTICATION on 25.2.2020 under General Anaesthesia

INTRA OP FINDINGS: Orange peel like pleural flakes

FINAL DIAGNOSIS: Right Lower Lobe Lung Abscess with Stage III Empyema

TREATMENT:

Surgery : Right Decortication with insertion of ICD.

Syrup LINEZOLID (100mg/5ml) 1-0-1x 7days.

Syrup CEFPODOXIME(100mg/5ml) 1-0-1x7days.

Syrup PARACETAMOL DS 4ml SOS for pain/fever.

Incentive Spirometry

MUPIROCIN OINTMENT IP 5mg 2for L/A 1-0-1 for ICD wound.

The patient was asked for follow up review in paediatric surgery OPD after 1 week.

DISCUSSION:

Lung abscess represents necrosis and cavitation of the lung following microbial infection.

Lung abscesses can be single or multiple but usually are marked by a single dominant cavity >2cm in diameter.(1)

They are a significant source of mortality and morbidity even though their prevalence has decreased in the antibiotic era. They can be primary (80%) or secondary. Primary lung abscess occurs mainly by aspiration, caused by anaerobic bacteria, and in the absence of an underlying pulmonary or systemic condition.

Secondary lung abscesses occur in the presence of an underlying condition such as an obstructive process (eg. Foreign body in bronchi or tumour) or a systemic process (eg. Immunocompromised conditions like HIV). Lung abscesses can also be characterised as acute (<4-6 weeks) or chronic (~40% of the cases).

Clinical manifestations are initially similar to those of pneumonia, with cough, fever, sputum production, and chest pain; in chronic cases night sweats, fatigue and anaemia is often observed with anaerobic lung abscesses.

Some patients with putrid lung abscesses may have discoloured, foul smelling and foul-tasting sputum. Patients with lung abscesses due to aerobic organisms like *S. Aureus*, have a more fulminant course with high fevers and rapid progression. Physical examination shows fever, poor dentition, and/or gingival disease, amphoric or cavernous breath sound. Digital clubbing and the absence of gag reflex may be additional findings.

Diagnosis is made by chest imaging. CT has a better definition and may provide earlier evidence of cavitation.

The infection is most likely polymicrobial so non-invasive sputum collection and culture may not reveal anaerobic pathogen. Many physicians treat for anaerobic infection empirically by considering putrid smelling sputum as diagnostic.

Parapneumonic pleural effusion (PPE) occurring in early-stage (stage I) pleural empyema (PE) can be managed by chest tube drainage, which should be performed as soon as possible, to achieve re-expansion of the pulmonary parenchyma. Chronic disease leads to fibrin deposits on both pleural surfaces (stage II), followed by a thickened pleura peel (stage III). (2) The compressed lung normally expands after drainage of fluid but if it fails to expand the surgical debridement and decortication is done either by Video assisted thoracoscopic surgery(VATS) or open technique(thoracotomy).

In Decortication, the fibrous cortex or peel from entrapped underlying lung is removed so that the lung can expand to obliterate the pleural space. This is usually performed through a

posterolateral thoracotomy. It requires careful dissection to remove the parietal and visceral cortex, taking care not to damage the visceral pleura, so allowing the lung to re-expand fully.(3)

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