Pleural Malignancy – A Rare Presentation

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CLINICAL COURSE

- A 50 year old male , civil engineer , non smoker , K/C/O DM-2 and CAD presented with complaints of

- Breathlessness
- Dry cough
- Right sided chest pain

20 days

- H/O Loss of weight

- History of fever during 1st week of illness.

- No H/O Wheeze / PND/ Orthopnea / Loss of appetite

CLINICAL EXAMINATION

- Conscious , Oriented
- No pallor/Icterus/clubbing/cyanosis/lymphadenopathy/ pedal edema

VITALS :

Afebrile
Pulse rate – 94/min
BP - 120/90 mmHg
RR - 24/min
SPO2 - 95% on Room air

R/S - Findings s/o Rt pleural effusion

CVS - S1 S2 present , no murmurs

P/A - Soft , no organomegaly

CNS - NAD

INVESTIGATIONS

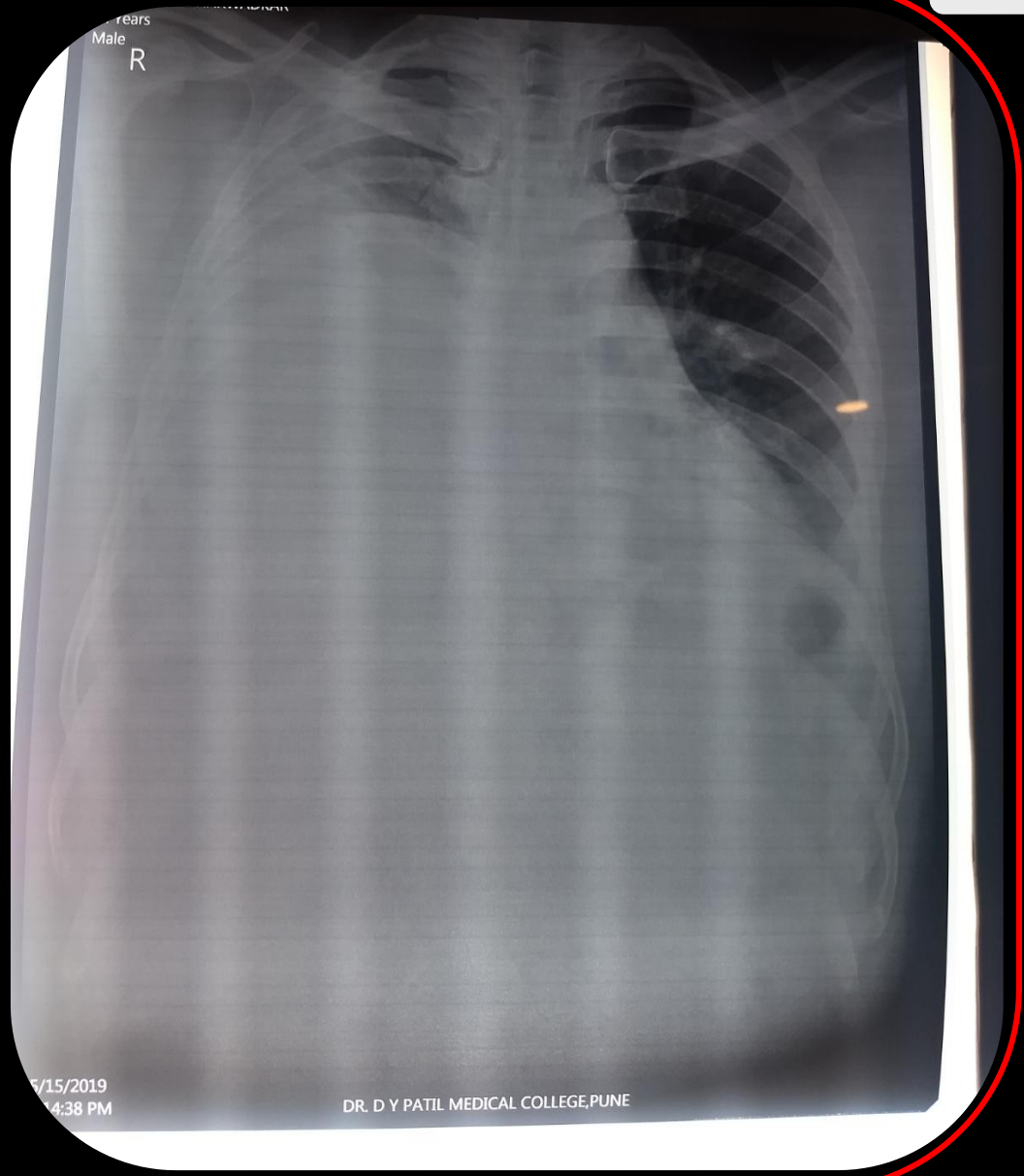
HB	11.5	Total Bilirubin	0.45	HBA1c	11.2
TLC	9200	Conjugated	0.16	Sr. Na	137
PBS	Normocytic Normochromic	Unconjugated	0.20	K +	4.1
Sr. urea	18	SGOT	20	CL	103
Creatinine	0.80	SGPT	21	Sr. uric acid	7.0
Sr.protien	8 gm%	Serum glucose	140 mg/dl		

CHEST X-RAY –

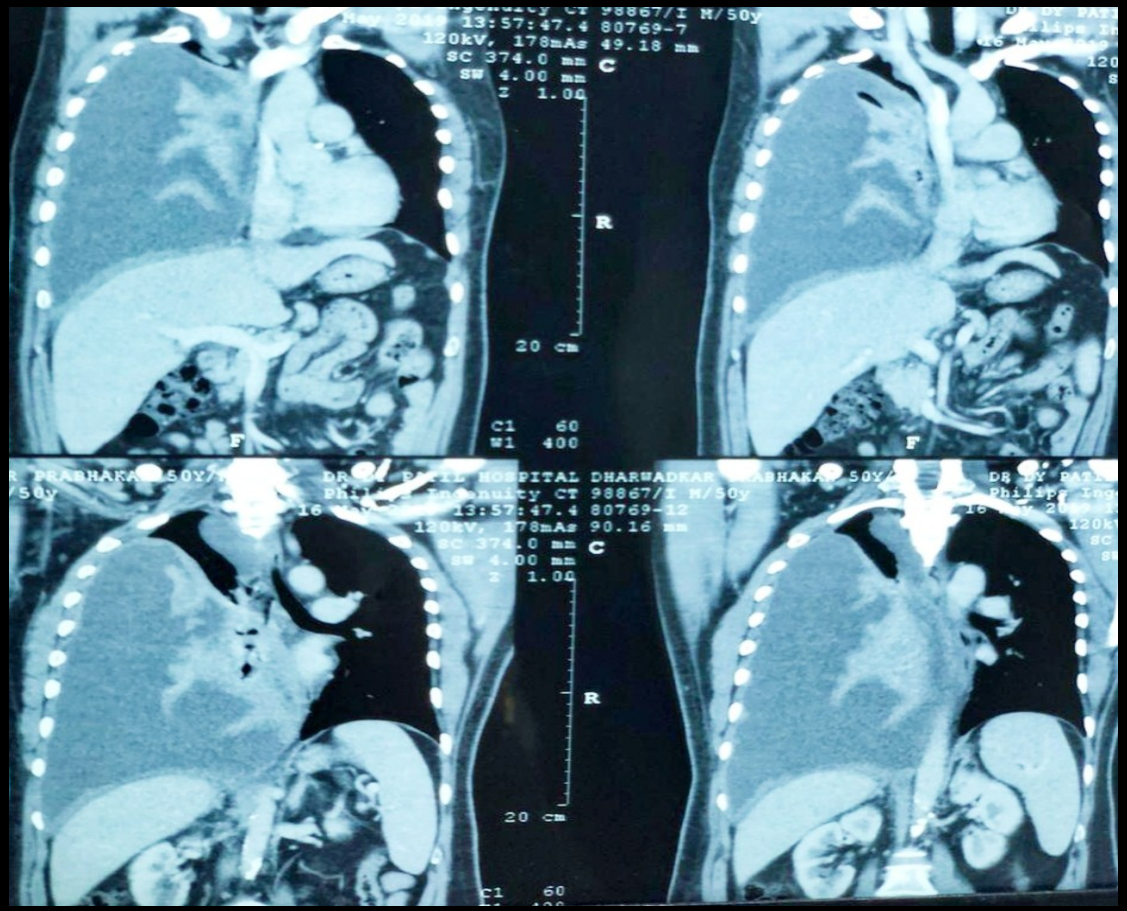
s/o Rt sided significant pleural effusion with contralateral mediastinal shift

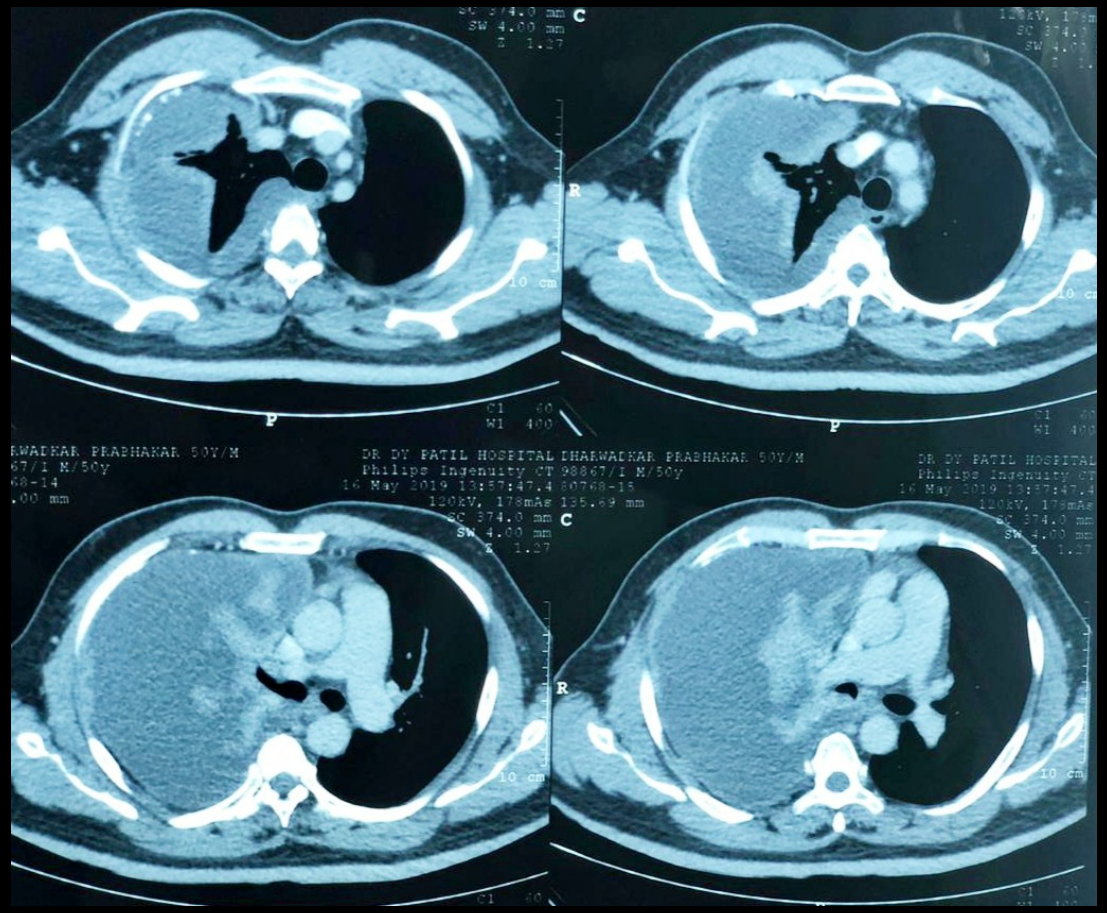
USG THORAX -

Massive pleural effusion with septations



CECT THORAX





Gross Rt sided pleural effusion with atelectasis of Rt lung with thick enhancing pleura.

- Thoracocentesis was performed , approximately 800 ml of turbid straw coloured fluid was aspirated.

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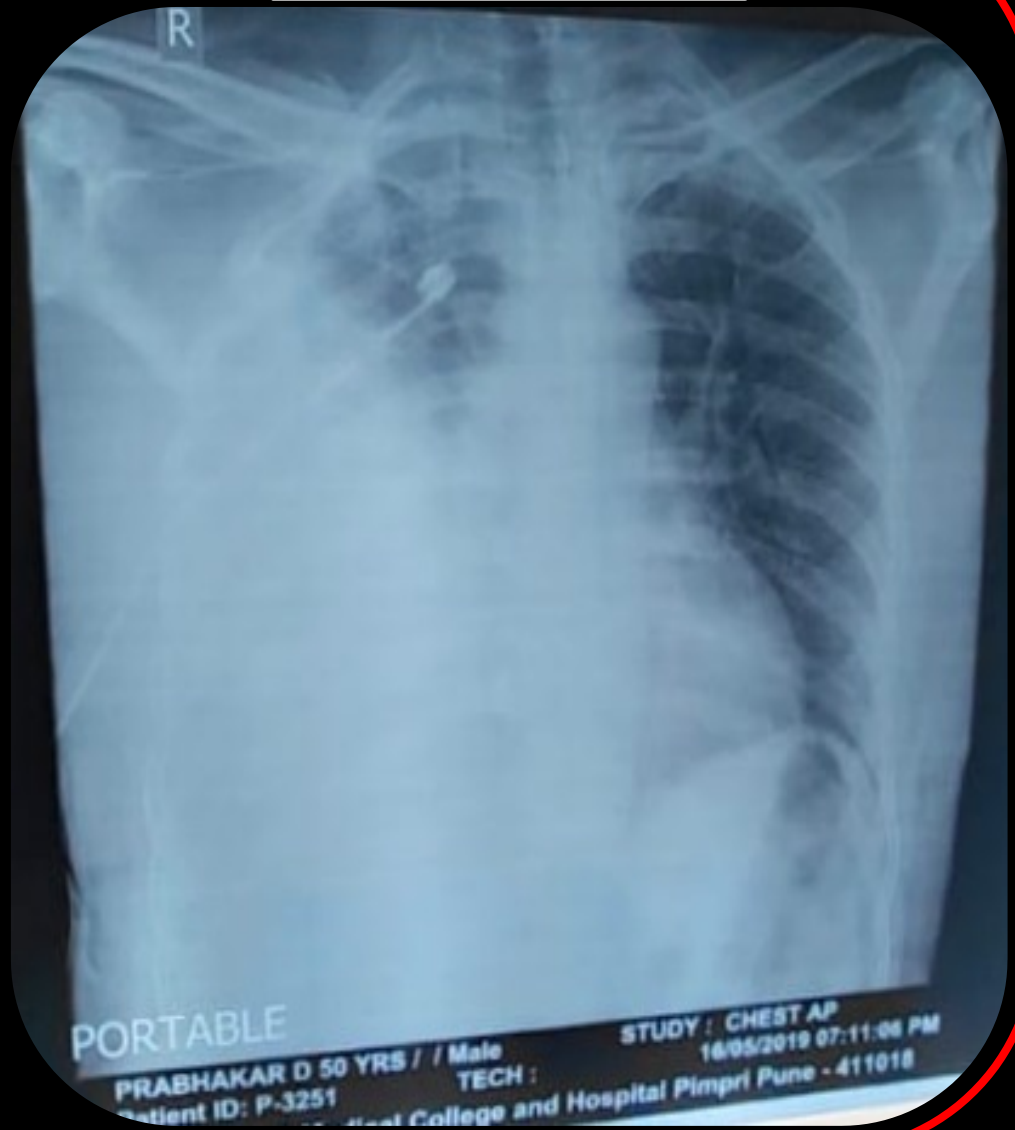
Appearance	Turbid yellow	TLC	3000 /cmm ↑	LDH	2440 U/L
Cob web	Not seen	DLC	N40,L20,M40	ADA	47 U/L
		Glucose	6mg/dl ↓	ZN/GS C&S	-
Malignant Cytology (3 consecutive samples)	Negative For Atypical cells.	Protien Sr.protiens Serum glucose	6 gm% 8 gm% 140 mg/dl	Leischman stain	Markedly cellular Predominately Polymorphs & Macrophages

s/o complicated parapneumonic effusion

- **Intercostal chest tube thoracostomy** was done

- Inj. Amoxicillin + Clavulanic acid 1.2gms thrice daily was started

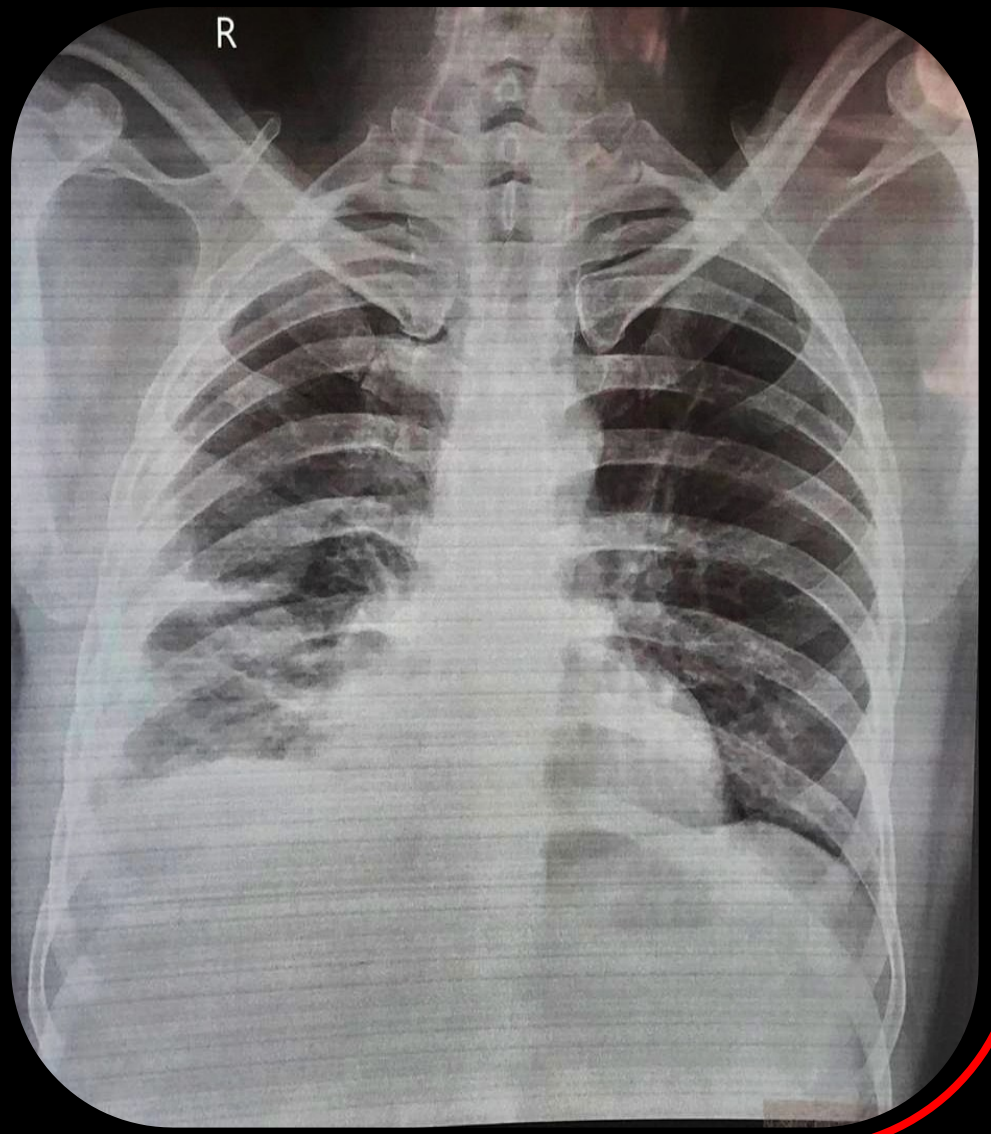
POST ICD XRAY…



- Around 3600 ml of turbid fluid was drained in 6 days
- ICD tube was removed when the drain was <50 ml for 48hrs
- Pt was discharged on Tab. Amoxicillin + Clavulanic acid 625mg thrice daily with the diagnosis

Complicated Parapneumonic Effusion (BTS criteria)

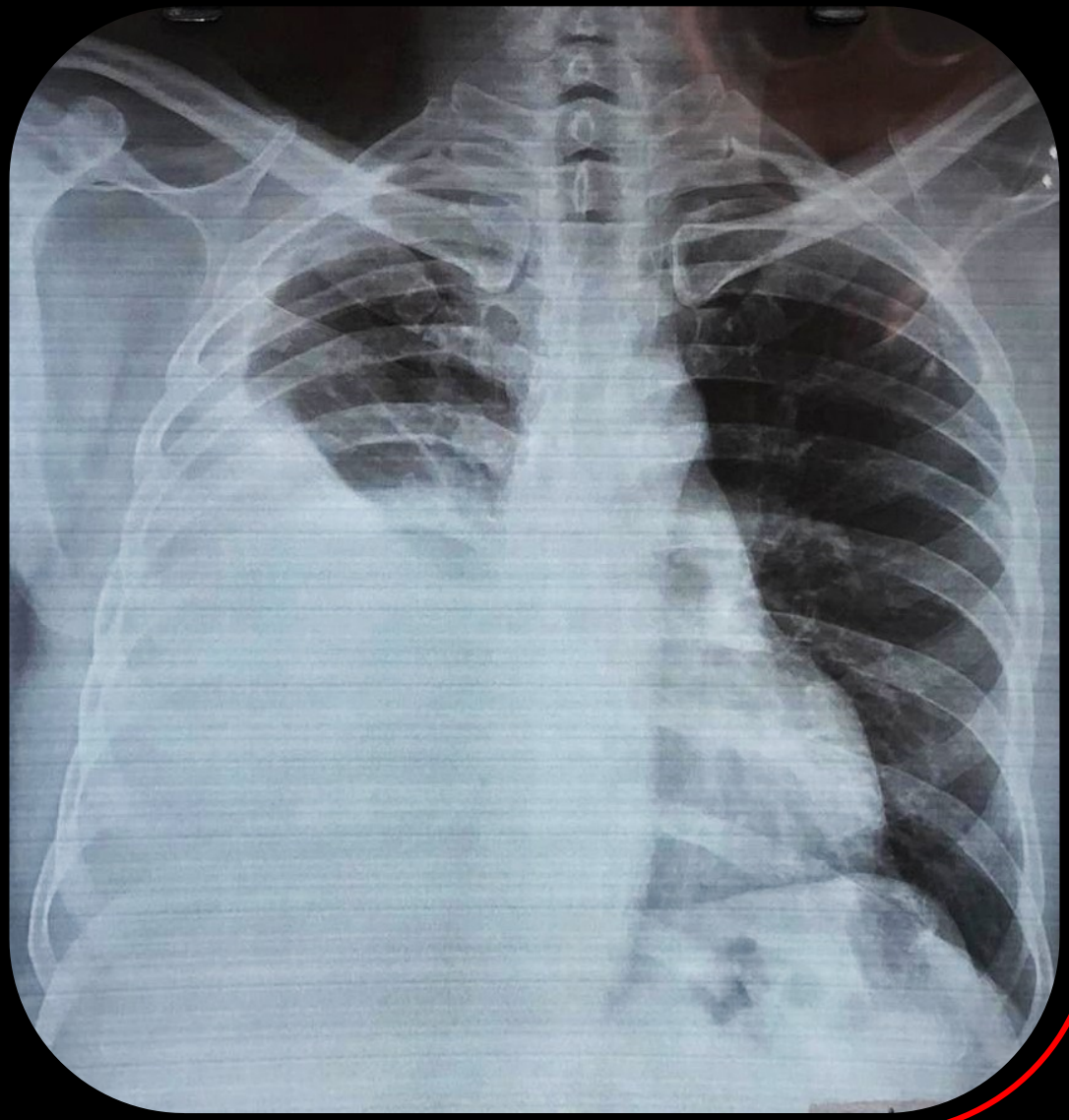
ON DISCHARGE..



Patient presented back to us after one week with the same complaints .

- CHEST XRAY : s/o Rt sided pleural effusion
- USG THORAX : s/o Moderate Right sided pleural effusion with collapse of underlying lung parenchyma

7 DAYS LATER....



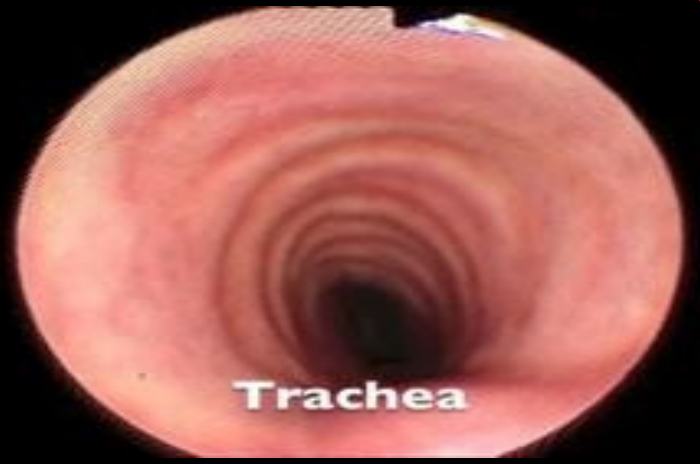
Diagnostic thoracocentesis was performed.

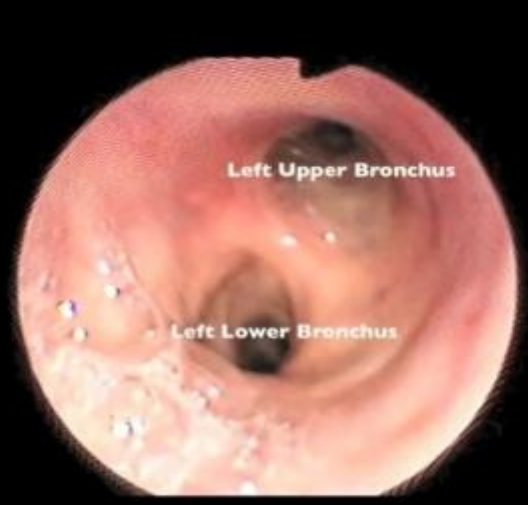
Appearance	Turbid yellow	TLC	2200/cmm ↑	ADA	42 U/L
Cob web	Not seen	DLC	N20,L10, M30, Polymorphic cells-40%	Proteins	5.87 gm%
Sr.Glucose	160mg /dl	Glucose	1mg/dl ↓	ZN/GS/C&S	No micro organisms seen
Sr.proteins	8 gm%	LDH	1270 U/L	Malignant cytology	Negative

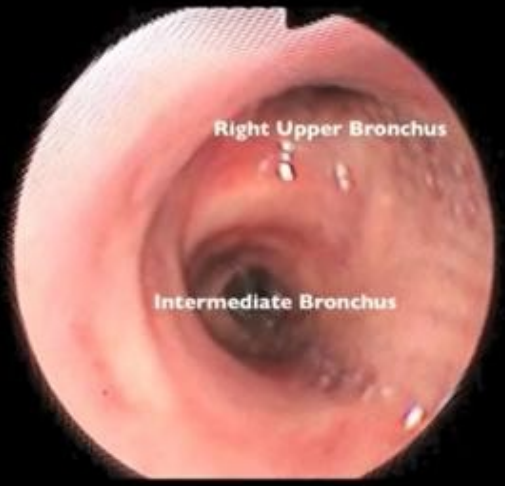
complicated parapneumonic effusion

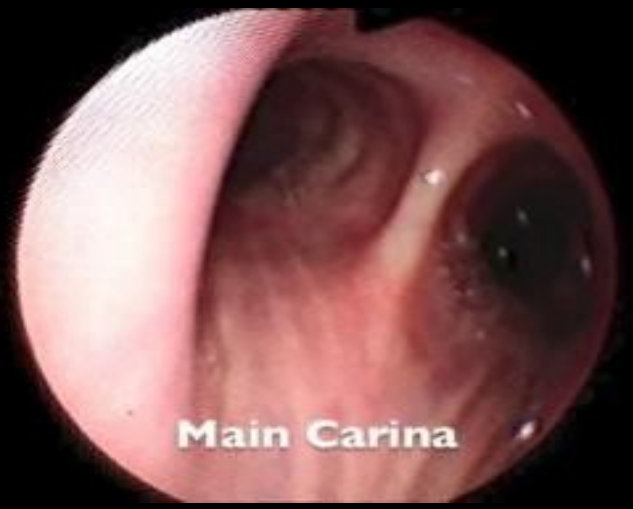
BRONCHOSCOPY –

No obvious endobronchial mass / any abnormalities seen.







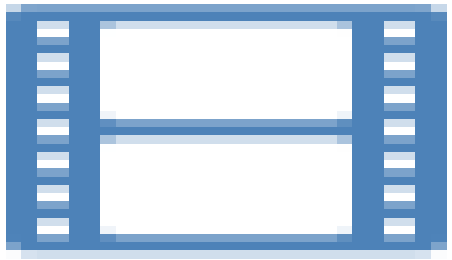


THORACOSCOPY

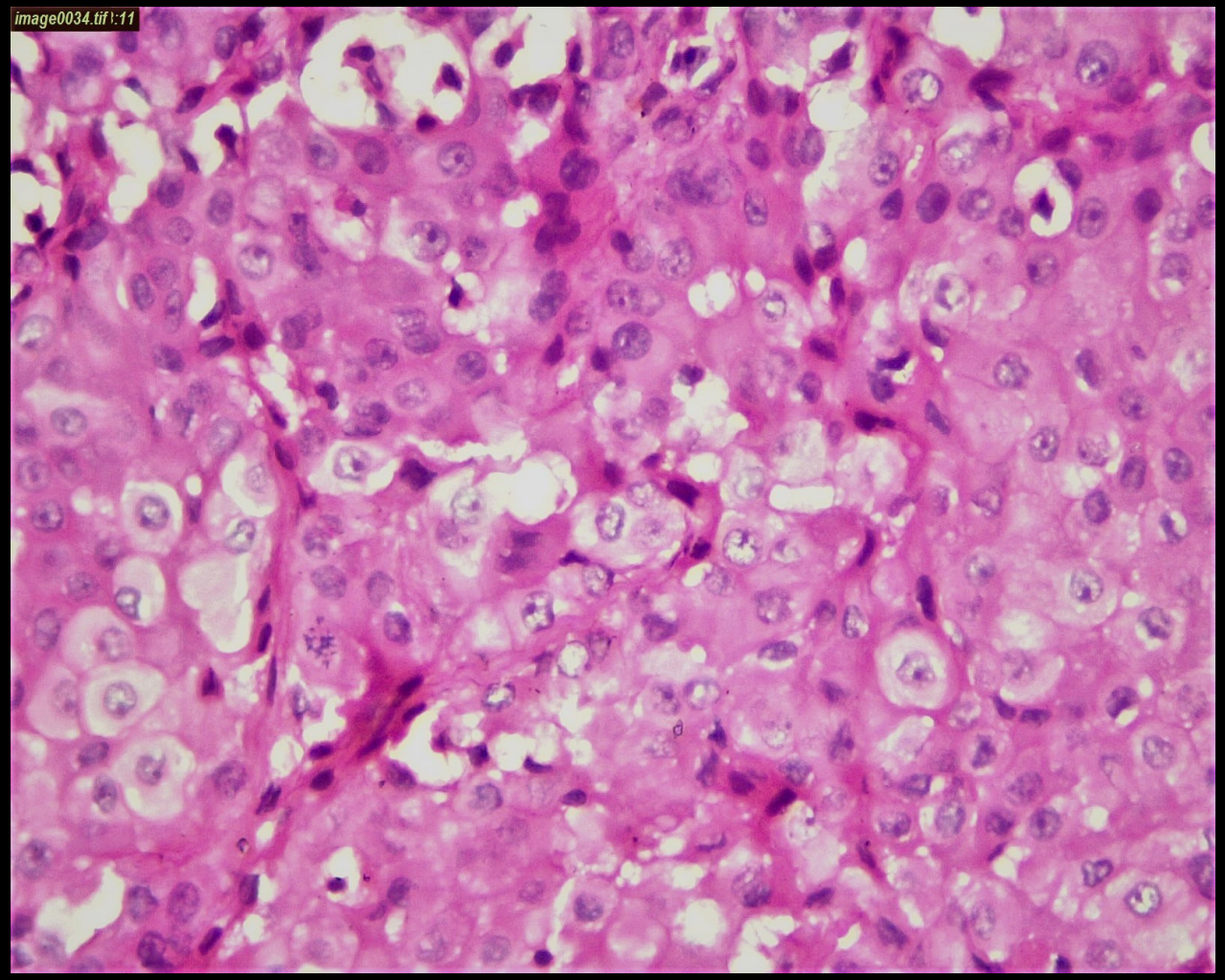
- Patient presented with
  - -Recurrent complicated pleural effusion despite of being treated adequately
  - -CT thorax s/o pleural thickening

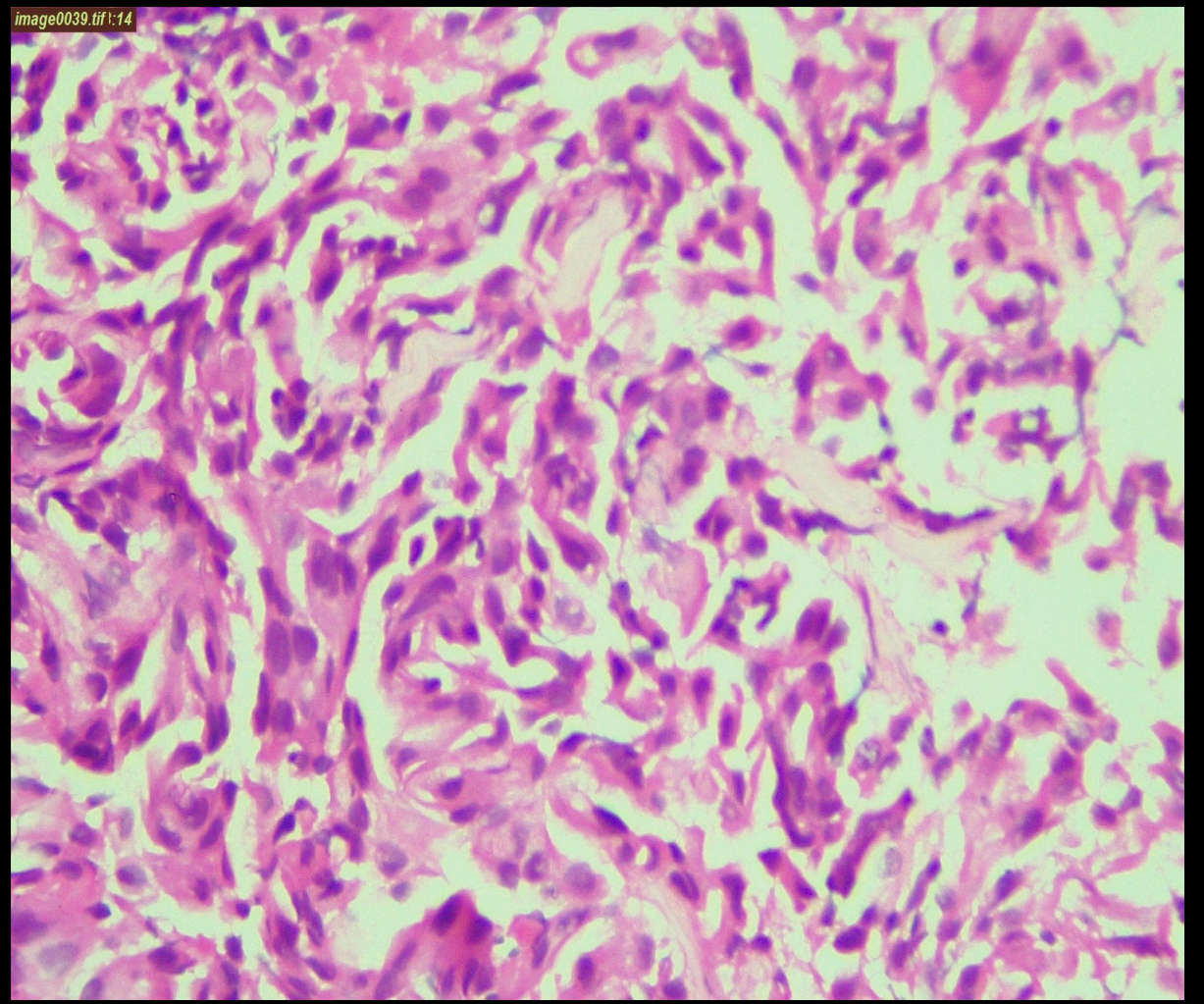
Thoracoscopy was done for getting a tissue diagnosis.

Revealed **numerous small pleural nodules** covering entire parietal & visceral pleural surfaces.



HISTOPATHOLOGICAL EXAMINATION





H&E STAIN 400

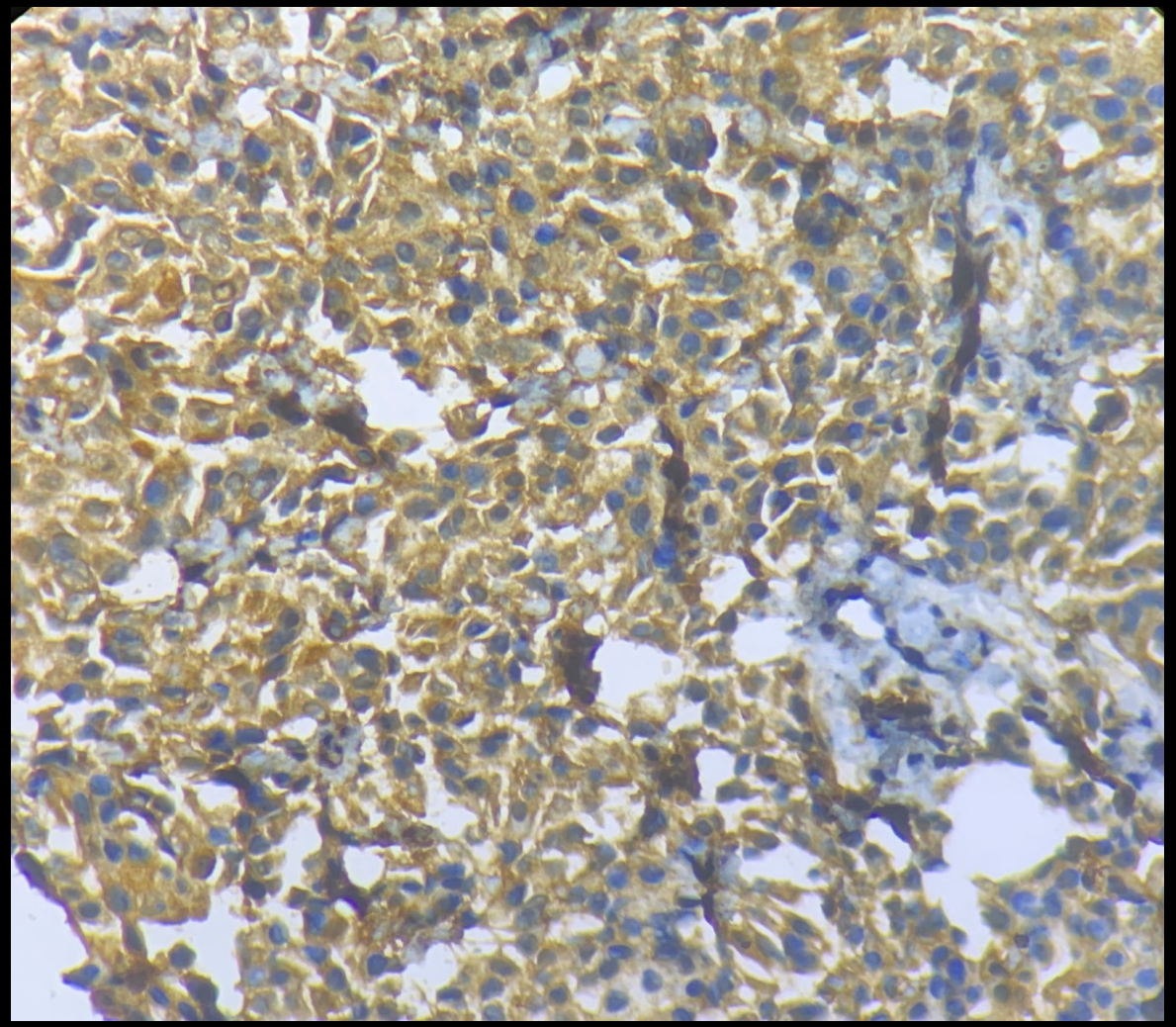
The sampled tissue was Positive for Malignancy

Based on the investigations done the differentials were-

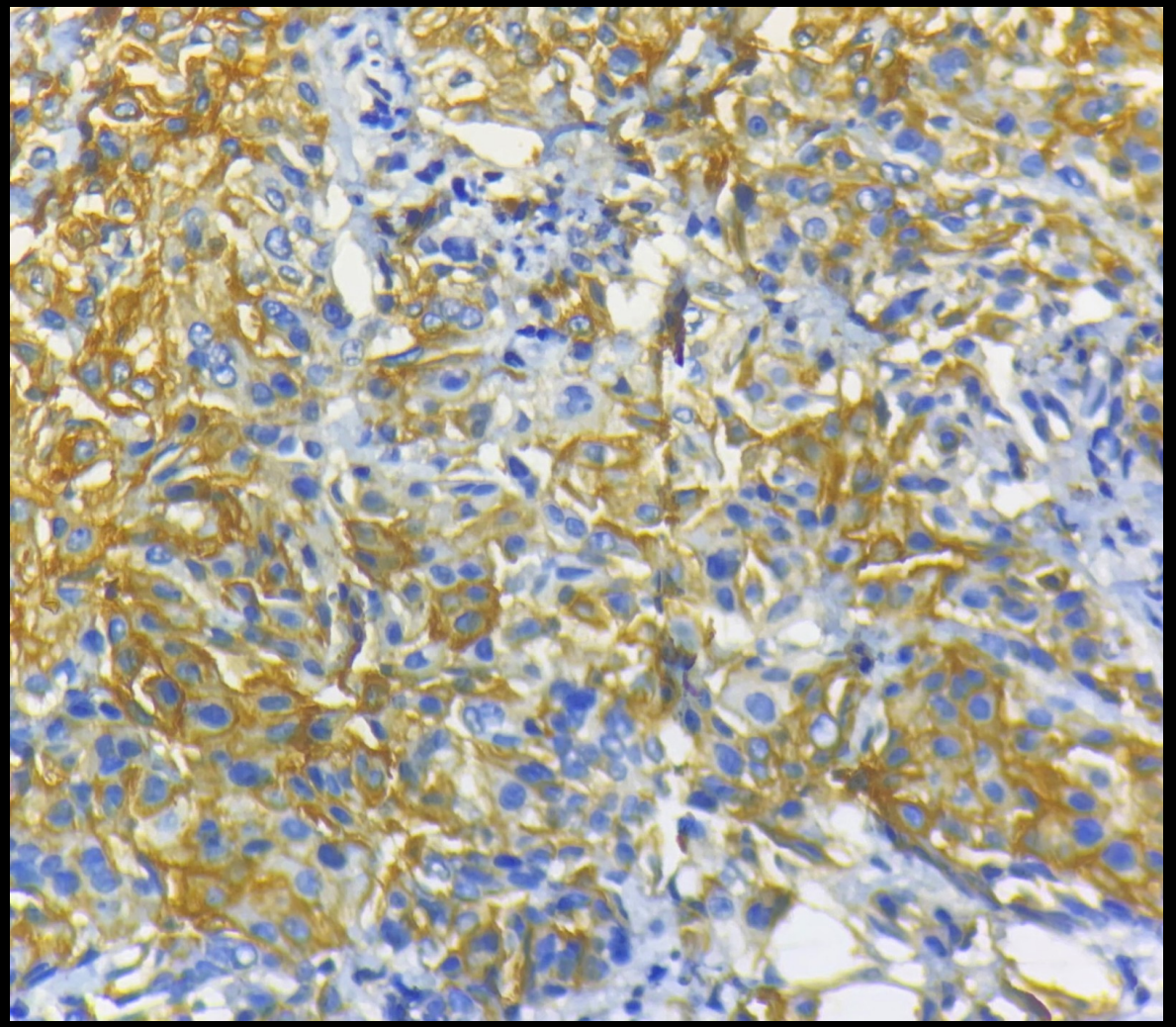
A)Malignant mesothelioma
B)Adenocarcinoma

For confirmation IHC was done.

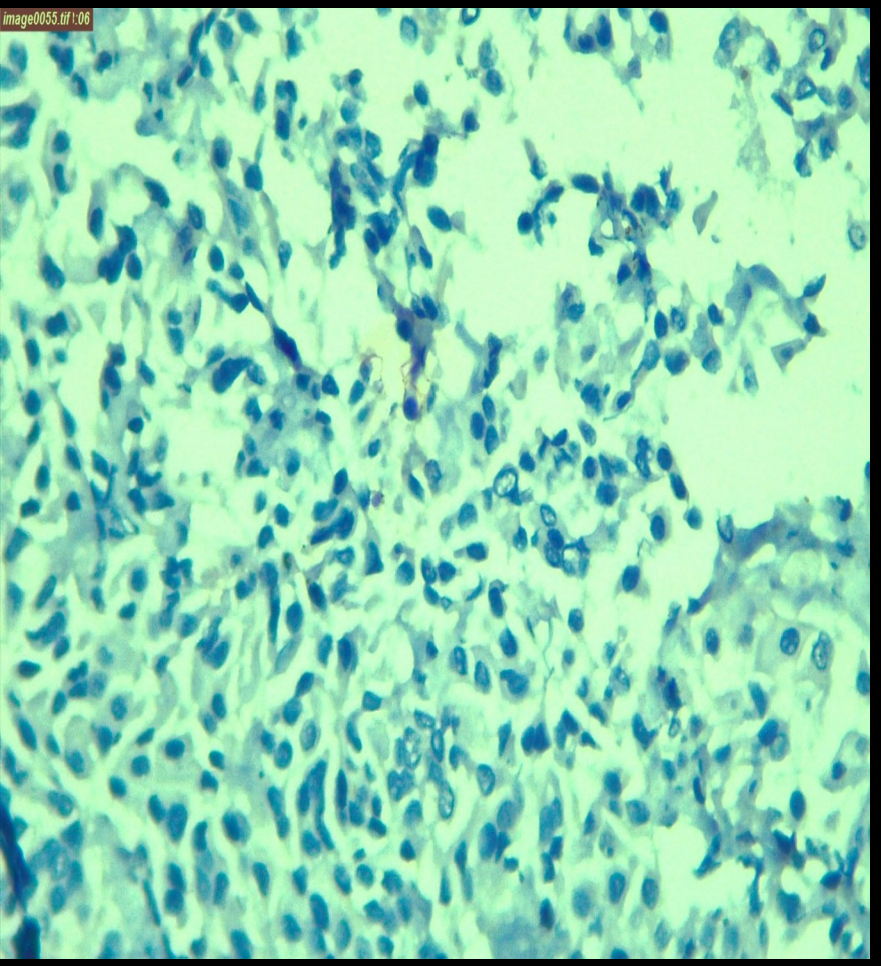
IMMUNO HISTOCHEMISTRY



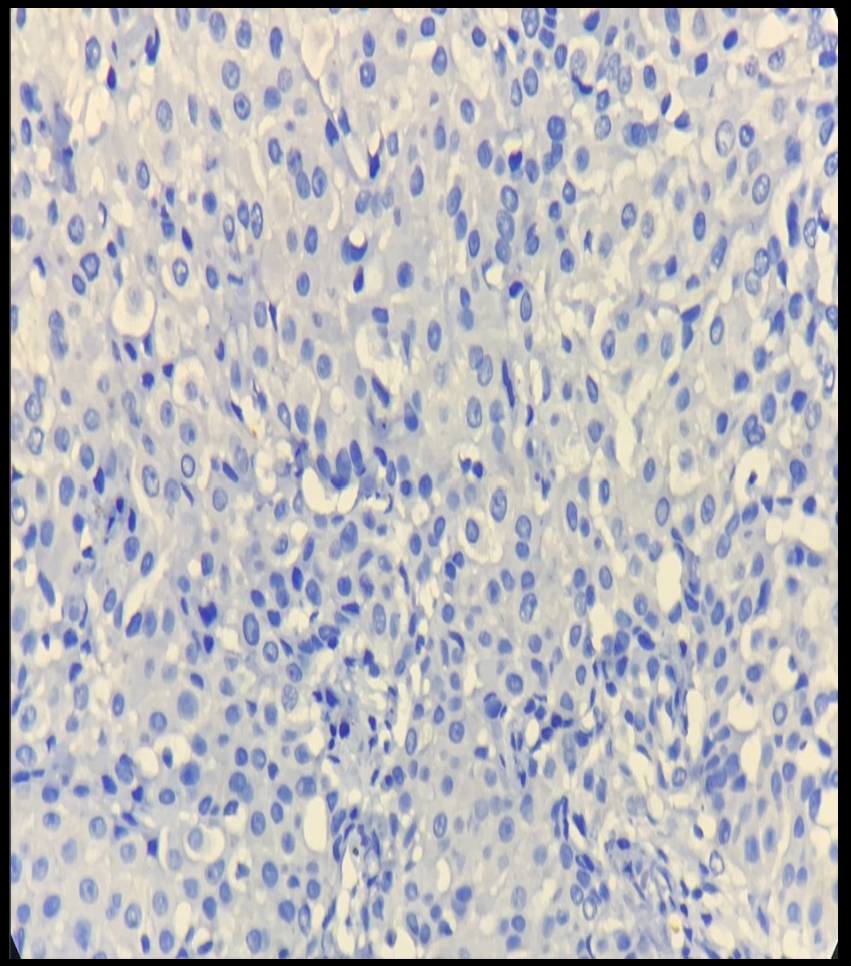
IHC Marker Calretinin (400x)



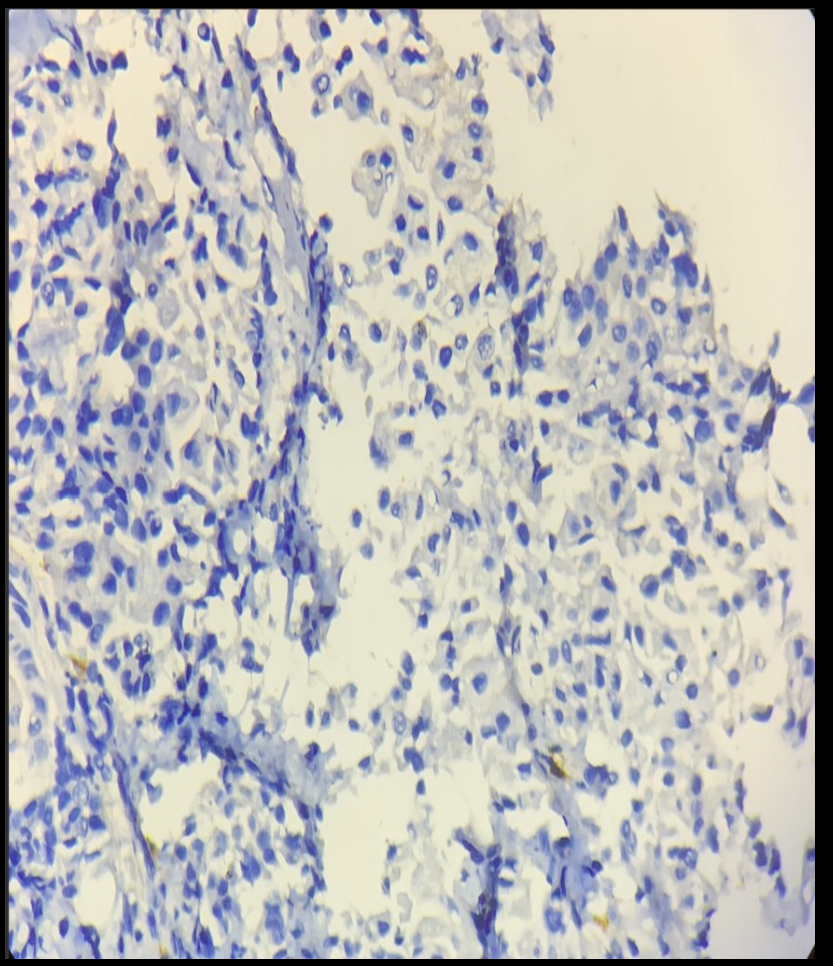
IHC Marker EMA (400x)



IHC Marker TTF-1 (400x)



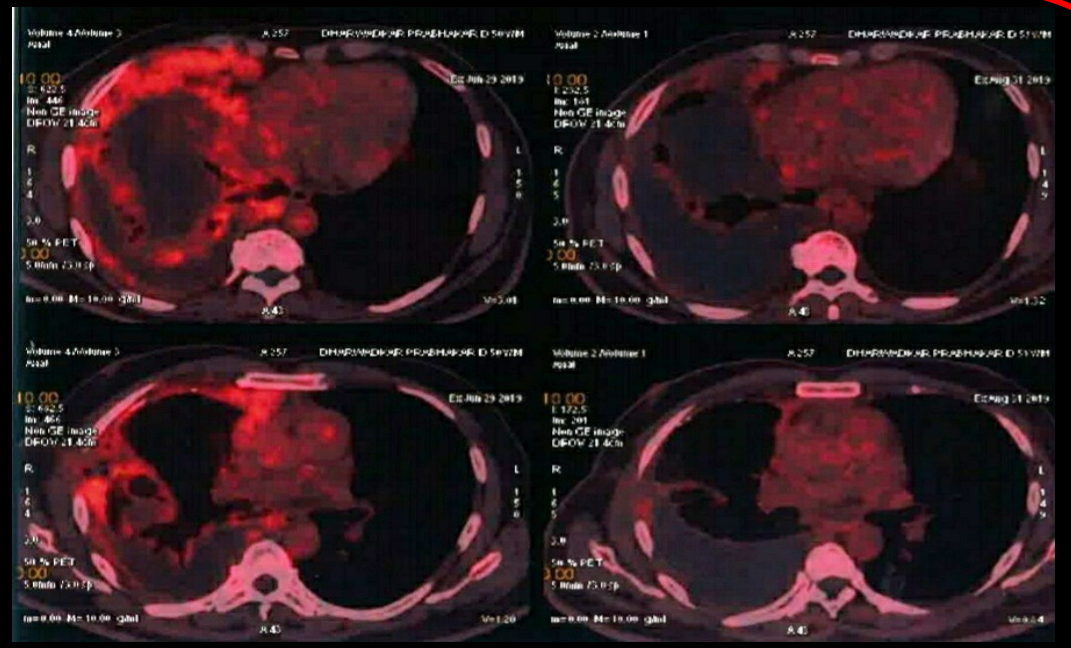
IHC Marker CD15 (400x)



IHC Marker CEA (400x)

PET SCAN :

- Right sided loculated pleural effusion with FDG avid pleural thickening.
- Few weakly metabolic mediastinal nodes.
- No FDG avid distant metastasis



DIAGNOSIS

Malignant pleural mesothelioma

(T1 N2 M0)

Follow up

- Patient started on chemotherapy (Pemetrexed + Carboplatin).
- Total 10 cycles of chemotherapy have been prescribed , currently 8 cycles of chemotherapy was done.

Review chest x-ray after 8 cycles of chemotherapy showed Rt pleural effusion but pt was asymptomatic

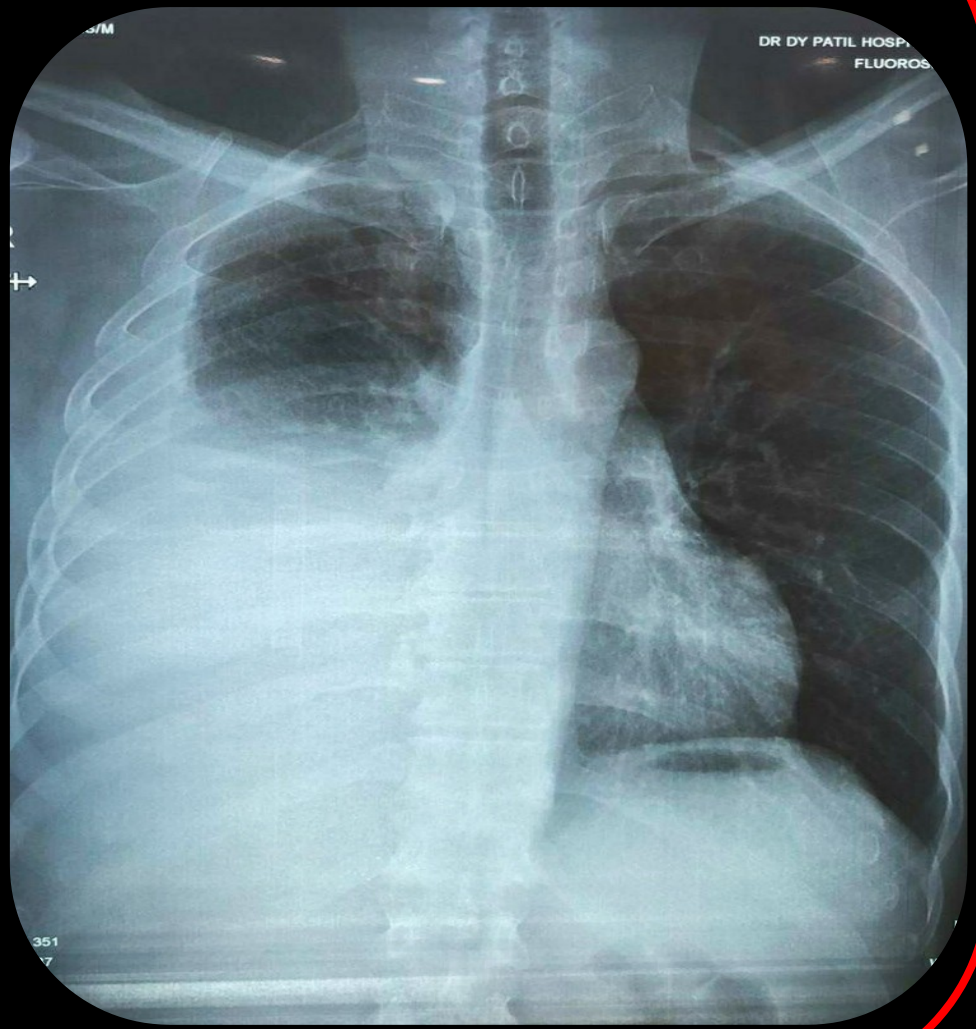
PLAN

If patient develops symptomatic pleural effusion

↓

Tube thoracostomy & pleurodesis

After 8 chemotherapy cycles…



DISCUSSION

- Malignant mesothelioma is a rare and insidious neoplasm with a poor prognosis.

- Arises from the mesothelial surfaces of pleura (most common) , peritoneal cavities ,tunica vaginalis & pericardium.

- Most cases of Malignant pleural mesothelioma have been associated with exposure to asbestos. (80% - 90%)

- Rare causes - Therapeutic ionizing irradiation to supradiaphragmatic fields, intrapleural thorium dioxide ,inhalation of other fibrous silicates such as erionite , simian virus 40.

Journal of Surgical Oncology / Volume 49, Issue 3

Article

Primary pleural mesotheliomas in south India: A 25-year study

Usha Kini MD, DCP, DNBE, Shameem Shariff MD, Dr. John A. Thomas MD, DHE

First published:March 1992

Only 15 cases were reported (1992)

Lung India

Case Report

Malignant pleural mesothelioma

Sukhesh Rao
Department of Tuberculosis and Respiratory Diseases, Yenepoya Medical College, Mangalore-575 018, Karnataka, India

ABSTRACT

Malignant mesothelioma is one of the rare tumors of pleura. One such case in a 57-year-old male, who presented w hemorrhagic pleural effusion and had no history of asbestos exposure, is reported here. The rarity, unusual presentati and implications are discussed.

Only 3 cases were reported in this 10 year study

Year : 2018 | Volume : 55 | Issue : 2 | Page : 190-195

Malignant mesothelioma: A histomorphological and immunohistochemical study of 24 cases from a tertiary care hospital in Southern India

Monalisa Hui[1], Shantveer Gurulingappa Uppin[1], Kakarla Bhaskar[2], Narahari Narendra Kumar[2], Gongati Kruparao Paramjyothi[2]

[1] Department of Pathology, Nizam's Institute of Medical Sciences, Punjagutta, Hyderabad, Telangana, India

[2] Department of Respiratory Medicine, Nizam's Institute of Medical Sciences, Punjagutta, Hyderabad, Telangana, India

24 cases (2018)

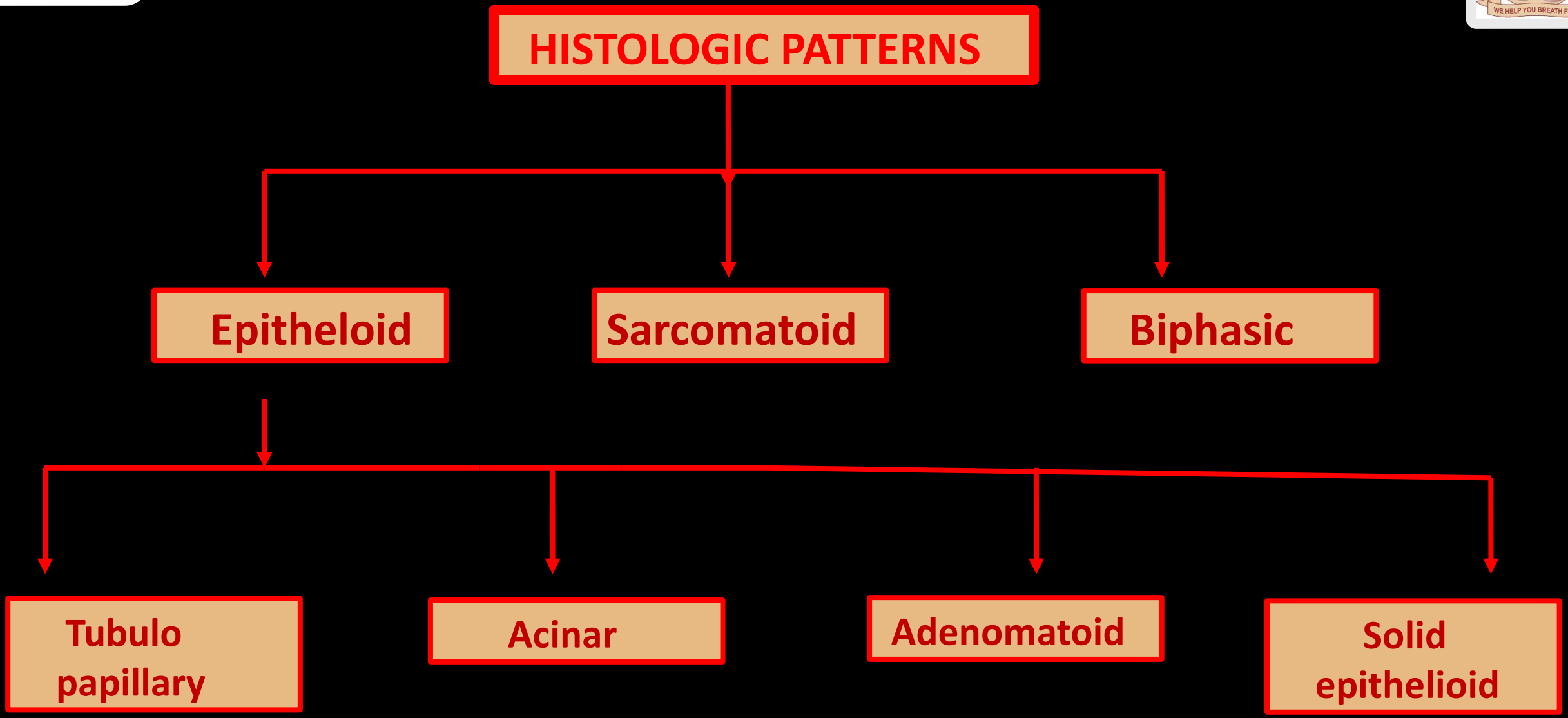
Most commonly presents in 5^{th}-6^{th} decades of life.

Most frequent presenting symptoms –

- Non pleuritic chest pain (60 - 70%)
- Dyspnea(25%)
- Cough(20%).

Typically unilateral disease only 10 % have B/L involvement

Prognosis is Poor , with overall survival being 9-17 months after diagnosis.


HISTOLOGIC PATTERNS
Epitheloid
Sarcomatoid
Biphasic
Tubulo papillary
Acinar
Adenomatoid
Solid epithelioid

TNM staging

Primary Tumor (T) :

TX Primary tumor cannot be assessed

T0 No evidence of primary tumor

T1 Tumor limited to the ipsilateral parietal pleura with or without involvement of Visceral pleura , Mediastinal pleura & Diaphragmatic pleura

T2 Tumor involving each of the ipsilateral pleural surfaces with at least one of the following features: Involvement of diaphragmatic muscle , Extension of tumor from visceral pleura into the underlying pulmonary parenchyma

T3 Locally advanced but potentially resectable tumor.

T4 Locally advanced technically unresectable tumor.

- T4

- **Regional lymph nodes (N):**

NX - Regional lymph nodes cannot be assessed

N0 - No regional lymph node metastases

N1 - Metastases in the ipsilateral lymphnodes

N2 - Metastases in the contralateral mediastinal , ipsilateral or contralateral supraclavicular lymph nodes

- **Distant metastasis (M):**

M0 - No distant metastasis

M1 - Distant metastasis present

Prognostic stage groups

Stage I

IA - T1 M0 N0
IB - T2/T3 M0 N0

Stage II

T1 N1 M0

-T2 N1 M0

Stage III

IIIA - T3 N1 M0

IIIB - T I –III N2 M0

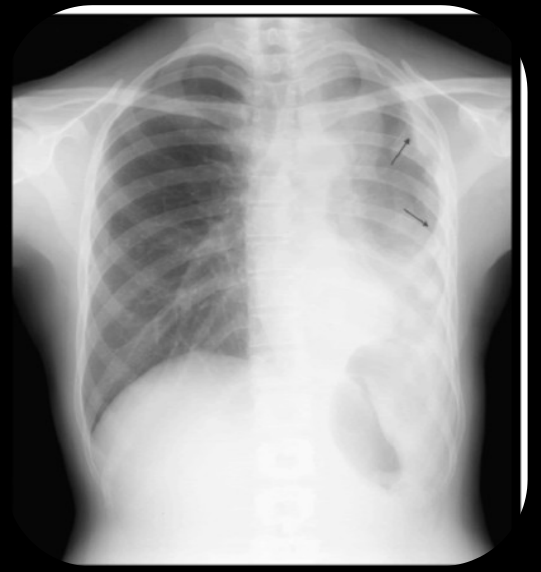
- T4 Any N M0

Stage IV

Any T Any N M1

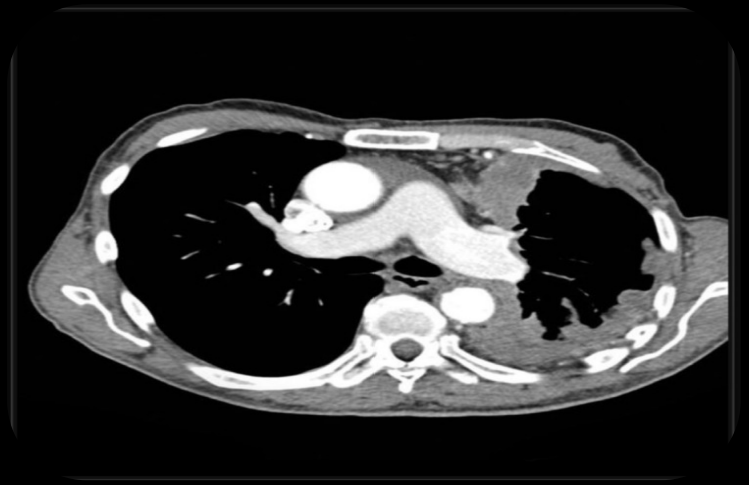
Chest x-ray

- Diffuse pleural thickening on left side with ipsilateral volume loss



CECT

- Circumferential pleural thickening with ipsilateral volume loss



TREATMENT

Multimodality treatment programs includes :

- **Surgical cytoreduction** (Extra pleural pneumonectomy(EPP), Parietal pleurectomy , Complete parietal & visceral pleurectomy

- **Chemotherapy –** Cisplatin + Pemetrexed
  Pemetrexed + Carboplatin

- Radiotherapy
- Immunotherapy
- Gene Therapy

Under trial

Acknowledgements :

Department of pathology

Thank you...