UNUSUAL LUNG MASS WITH DUAL HISTOPATHOLOGY

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CASE PROFILE:

78 years / Male farmer presented to an outside private hospital with

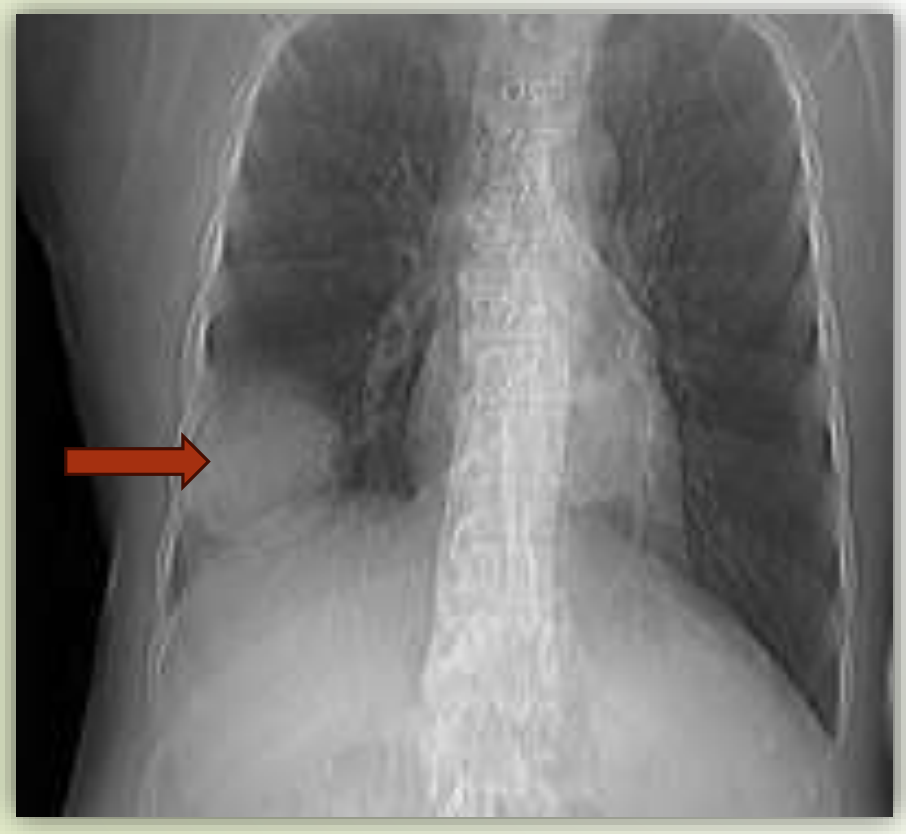
- C/o cough since 6-7 days which increases in night and on lying down, associated with whitish scanty expectoration, blood tinged sputum after brushing.
- C/o breathlessness since 1 month, only on exertion, no history of wheeze.
- C/o chest pain since 4 days.

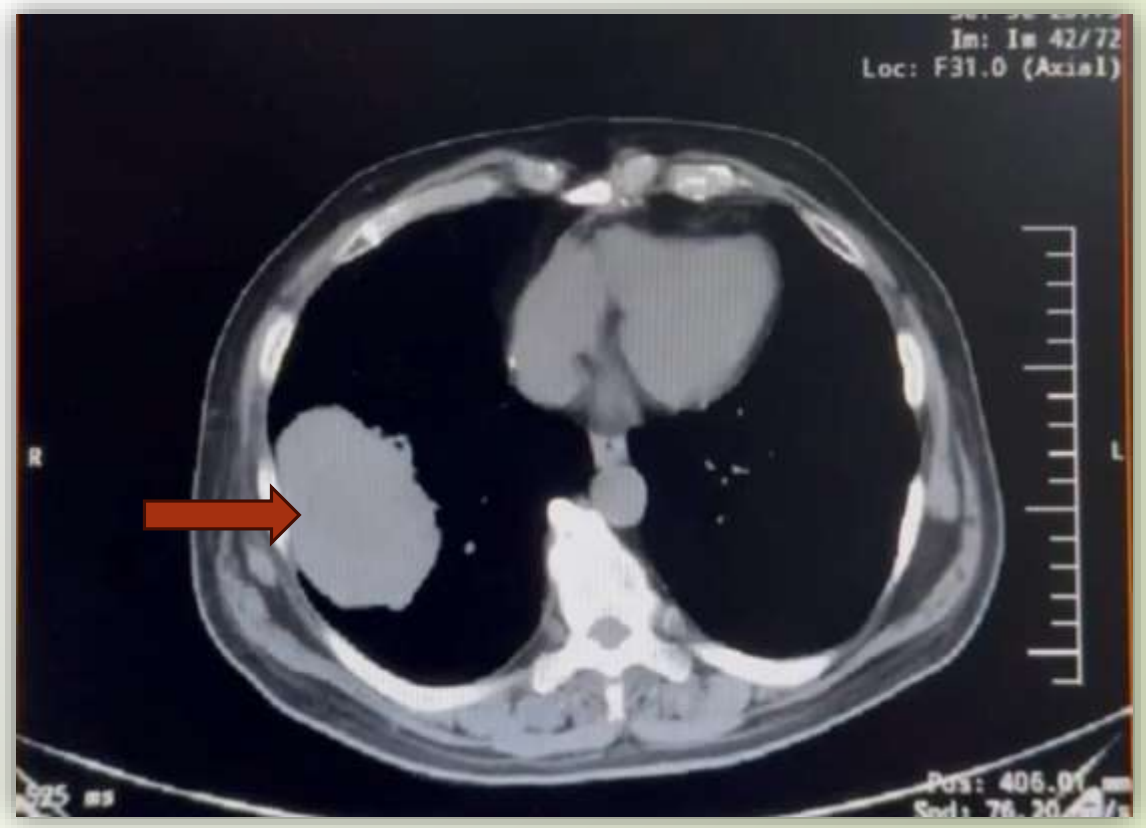
- H/o cigarette smoking since 12 years (4-5 cig./day since 5-6 years)
- H/o alcohol consumption since 15 years.
- K/C/O Hypertension and type 2 DM since 5-6 years (on medication).
- No h/o TB/ contact TB/ Covid 19.

- On examination : Patient is hemodynamically stable on room air.
- BP - 114/68 mmhg
- PR - 96/min.
- RR - 18/min.
- SPO2 - 96% on room air.
- RS – Bilateral ronchi noted.
- CNS- Conscious and oriented.

RADIOLOGICAL INVESTIGATIONS

- Xray chest AP view – Right sided pleural effusion.
- HRCT Thorax - A well defined lesion with few spiculated margins in lateral and anterior segments of Rt lower lobe abutting the segmental bronchus of lateral segment of Rt lower lobe.

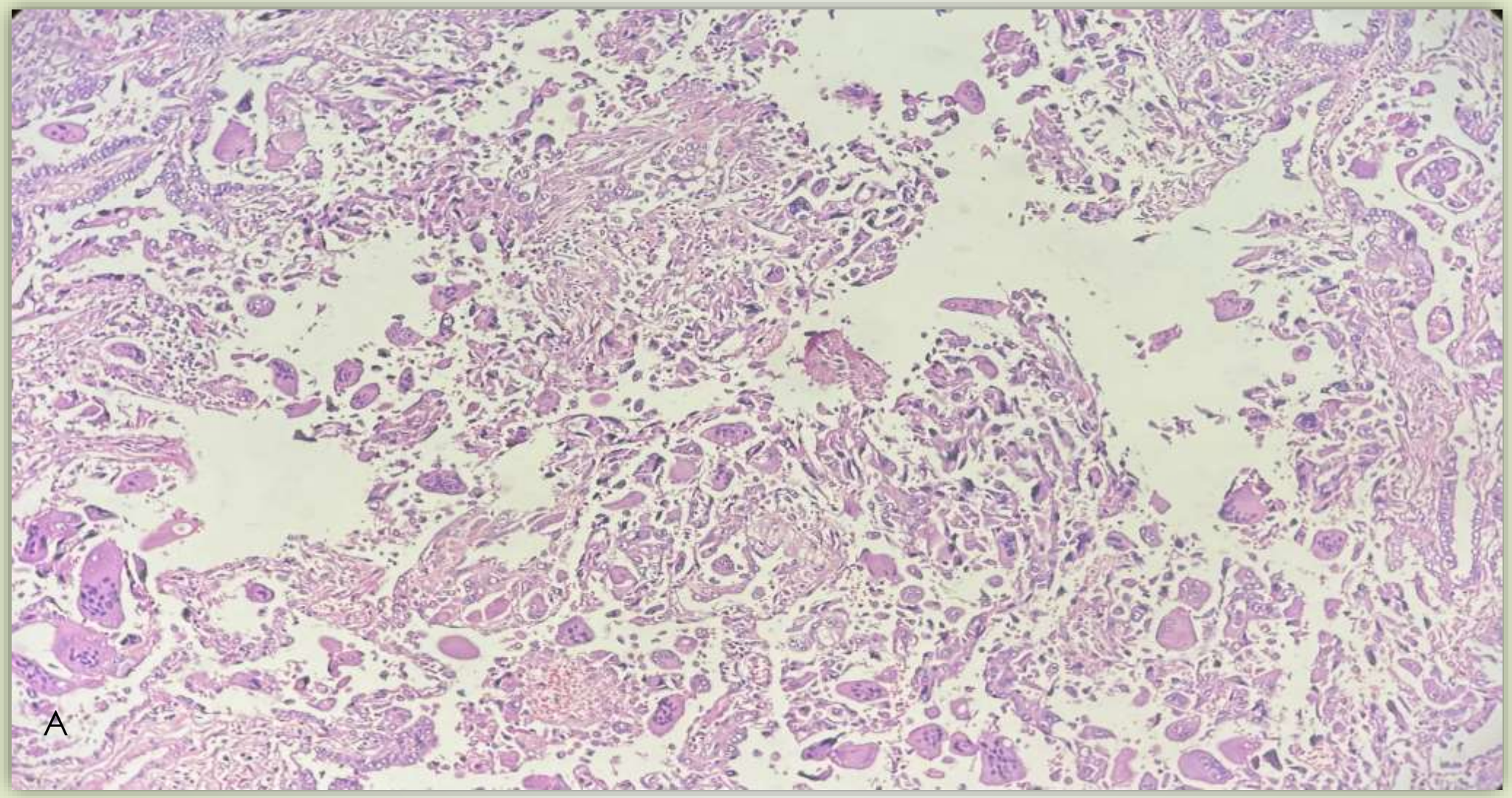




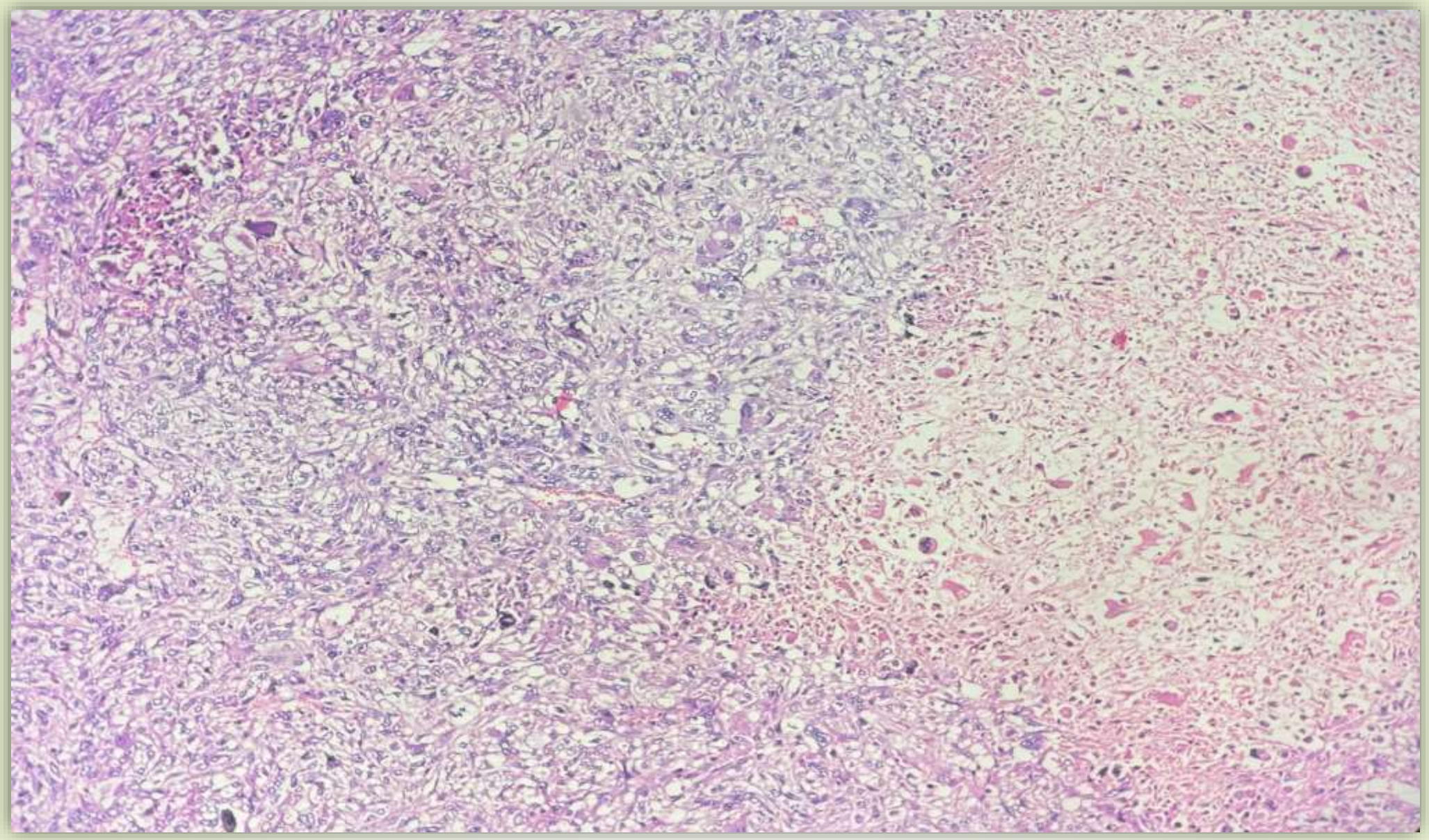
- HPE Report (outside) – Undifferentiated pleomorphic giant cell containing malignant tumor.
- Patient was referred to our hospital.
- Right lower lobectomy with Intraoperative frozen section of subcarinal lymph node was advised.
- Subcarinal lymph nodes sent for Frozen section : 4 lymph nodes were identified which are negative for metastatic epithelial malignancy.
- Excised specimen of Right lower lung lobe with lymph nodes was sent for Histopathological examination.

GROSS DESCRIPTION : We received right lower lobe of lung measuring 12 x 9 x 3 cm and weighing 200 gms. Externally, pleural surface showed a defect measuring 6.5 x 6 x 4 cm. On cut surface - The defect area appeared irregular grey brown. The distance of the defect from parenchymal resection margin was 3 cm. Bronchial margin was 2 cm, vascular margin was 1.5 cm. Also received multiple grey brown irregular friable tissue pieces aggregating to 3.5 x 3 x 1.5 cm and weighs 15 gms.

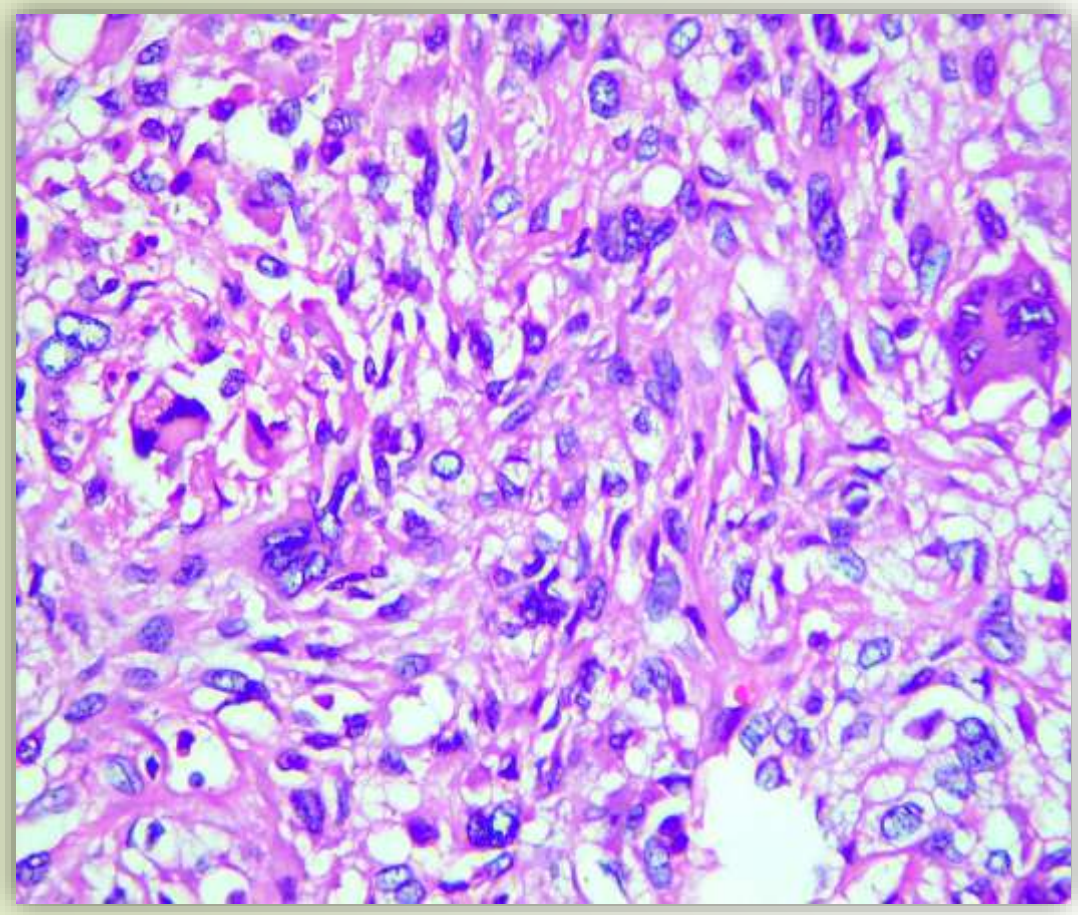
MICROSCOPIC FINDINGS :

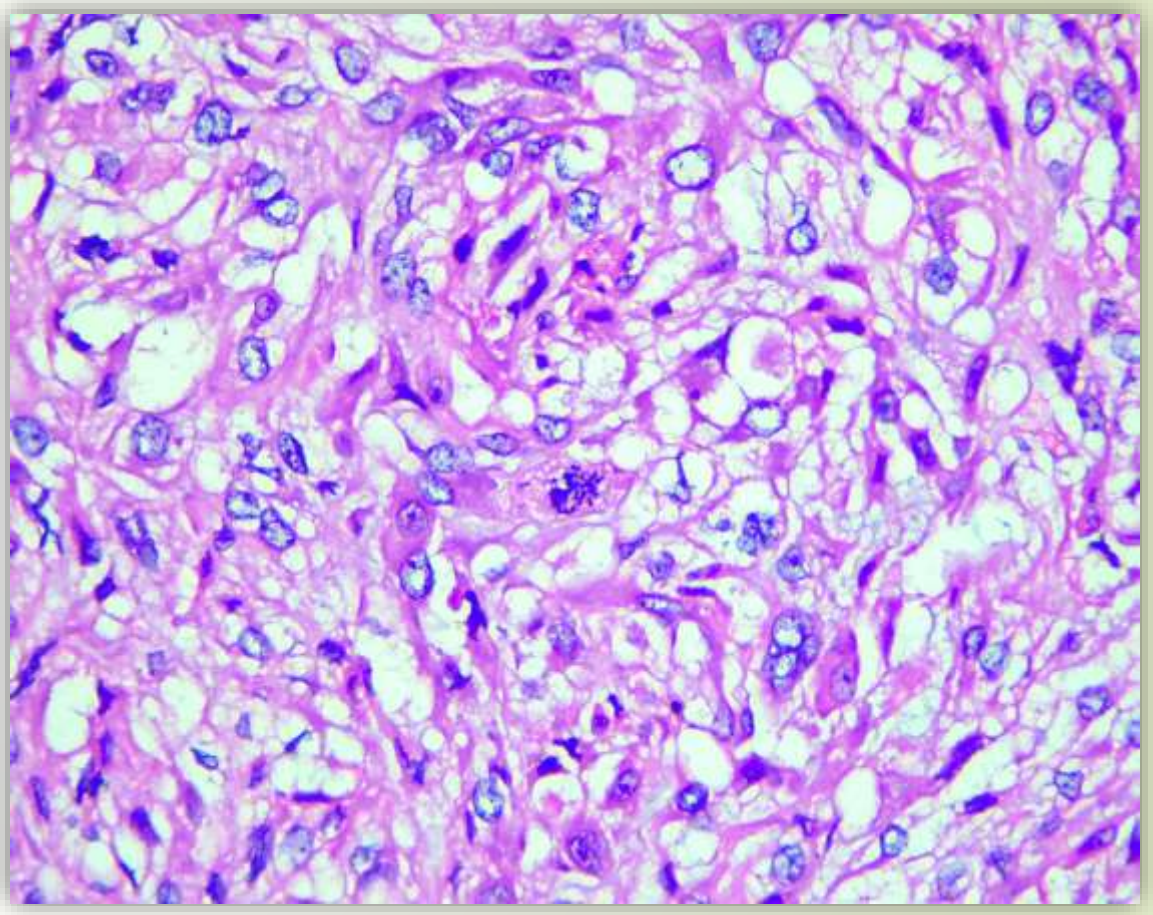


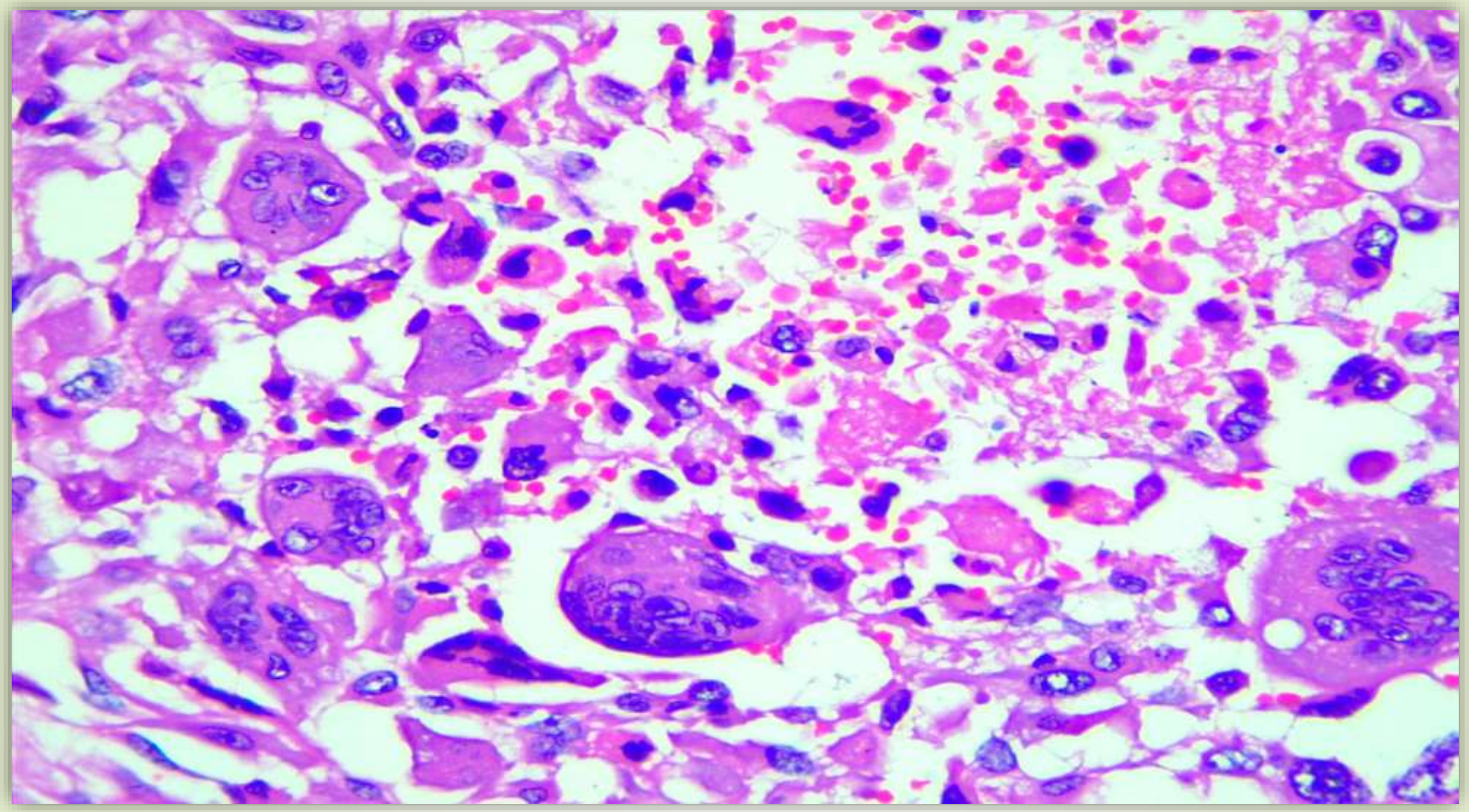
There is a mixed components of multiple histological types carcinomatous (epithelial) component and sarcomatous (mesenchymal) components. Focally, the epithelial and mesenchymal components are intermixed.

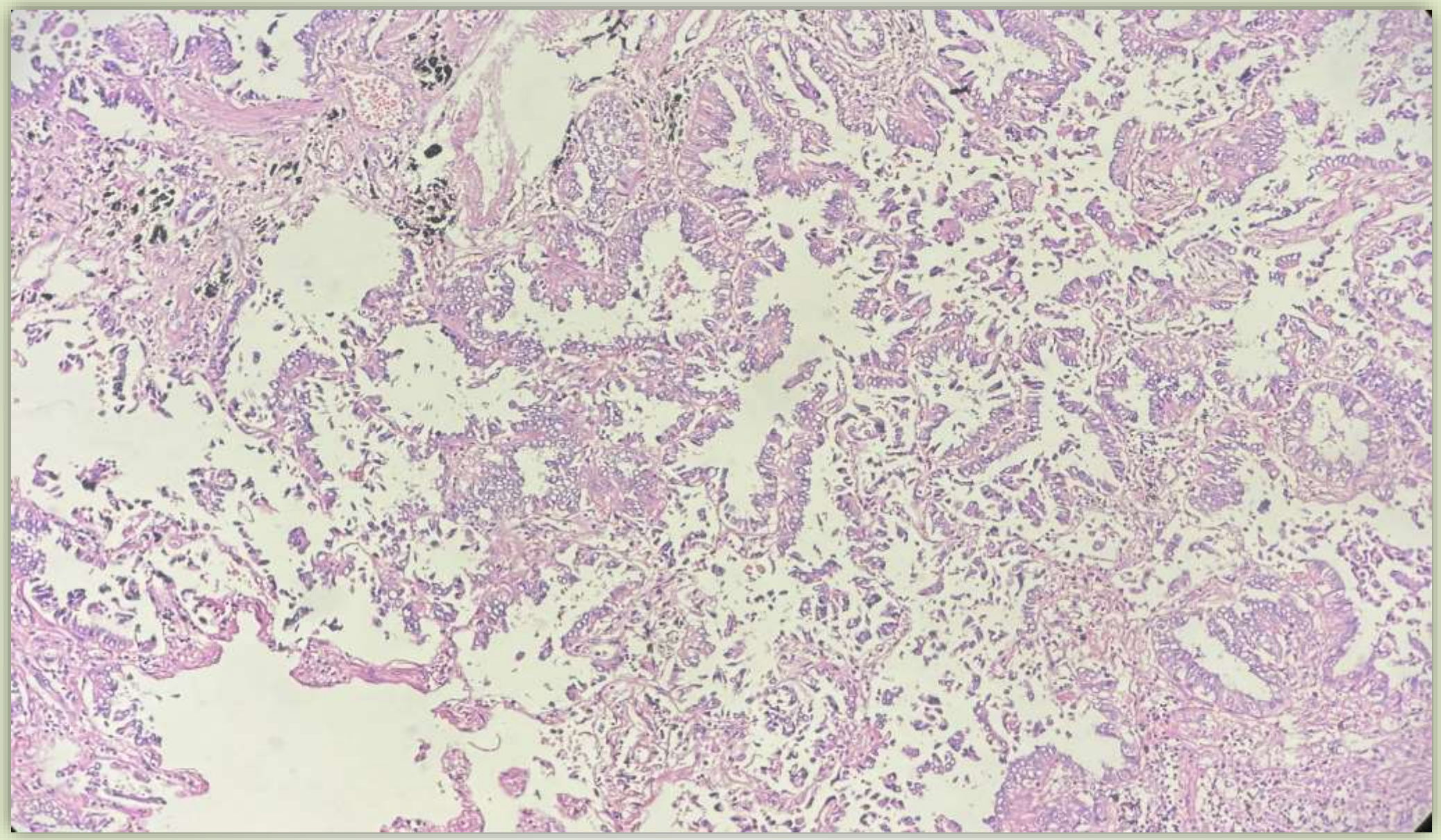


Sarcomatous (Mesenchymal) component showing areas of necrosis

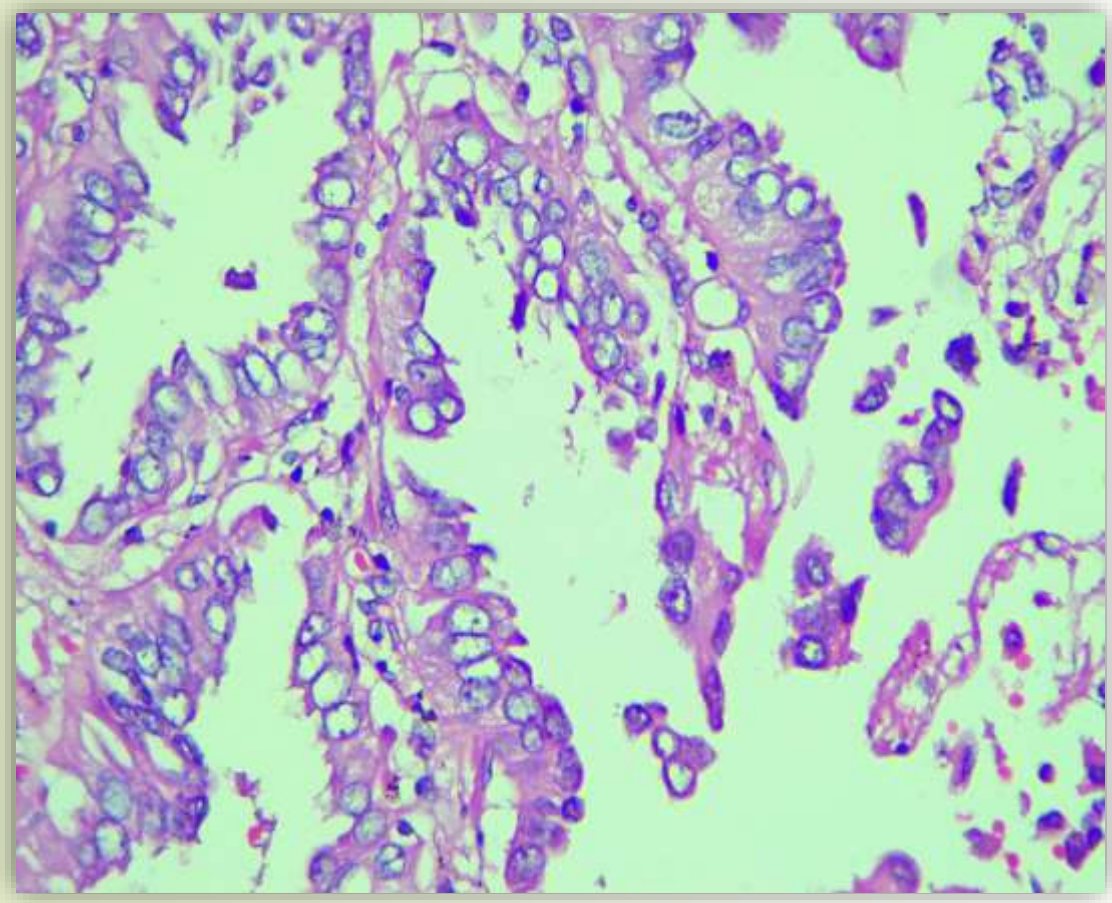


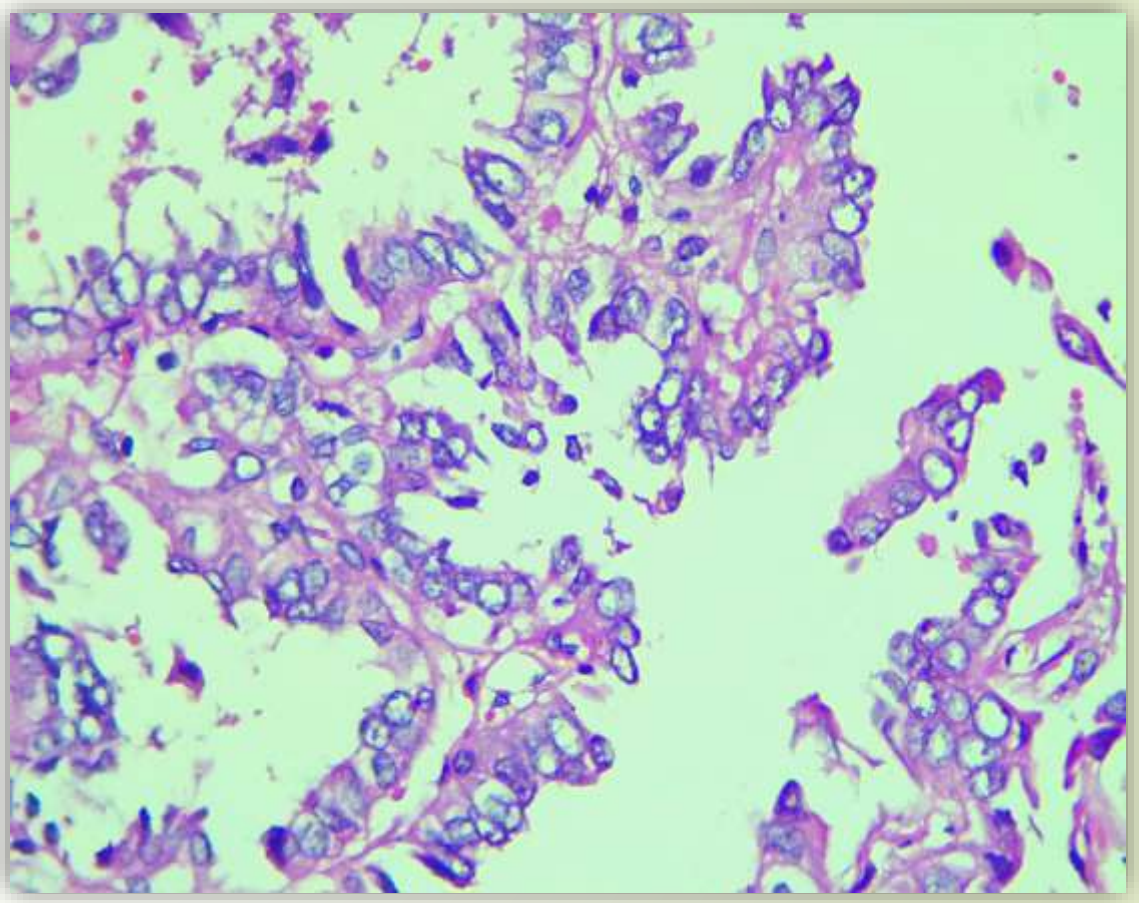






Carcinomatous (epithelial) component consisting of papillary and glandular pattern





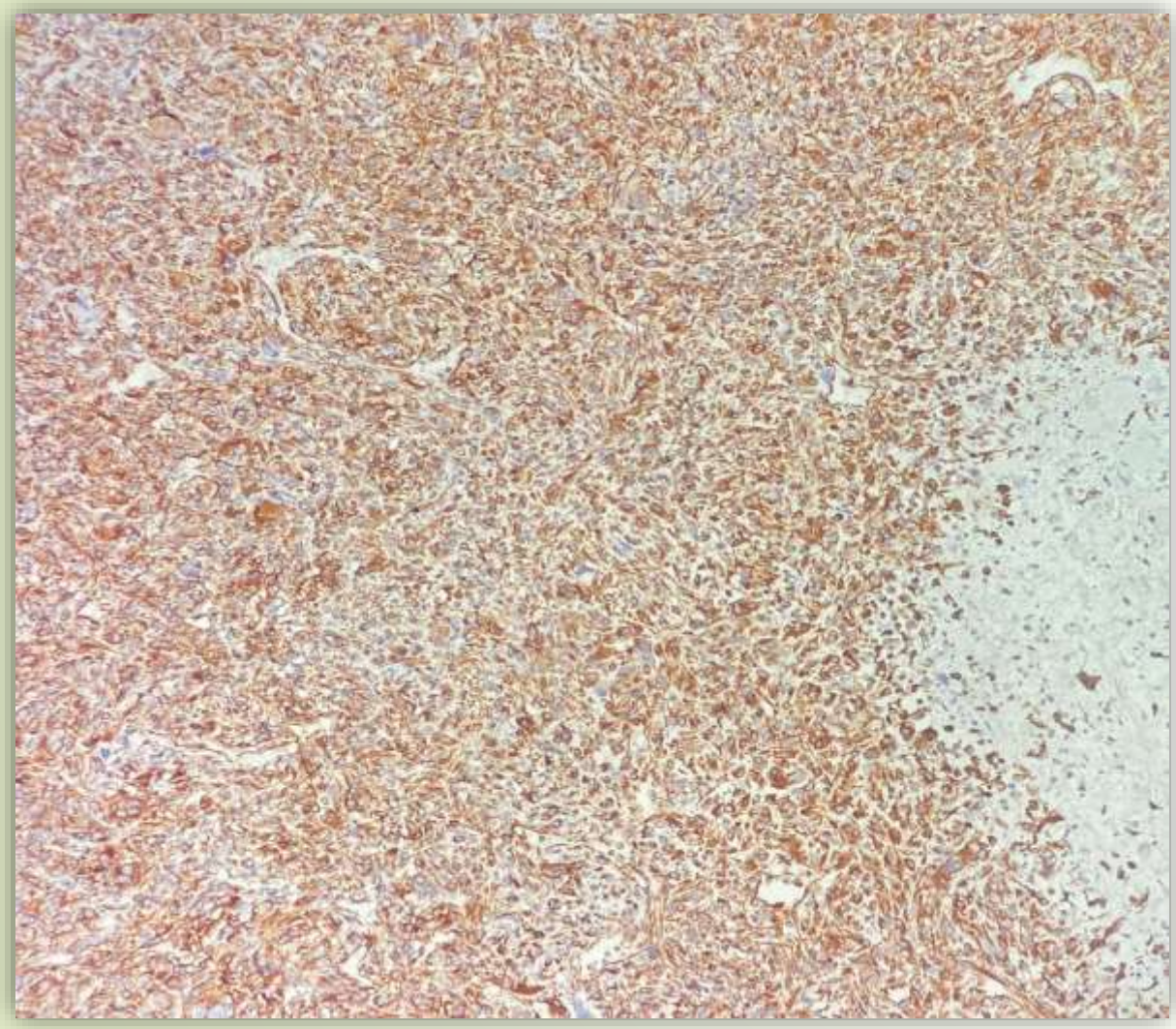
- Above Histomorphological findings showed 2 components:

(Sarcomatous component and carcinomatous component)

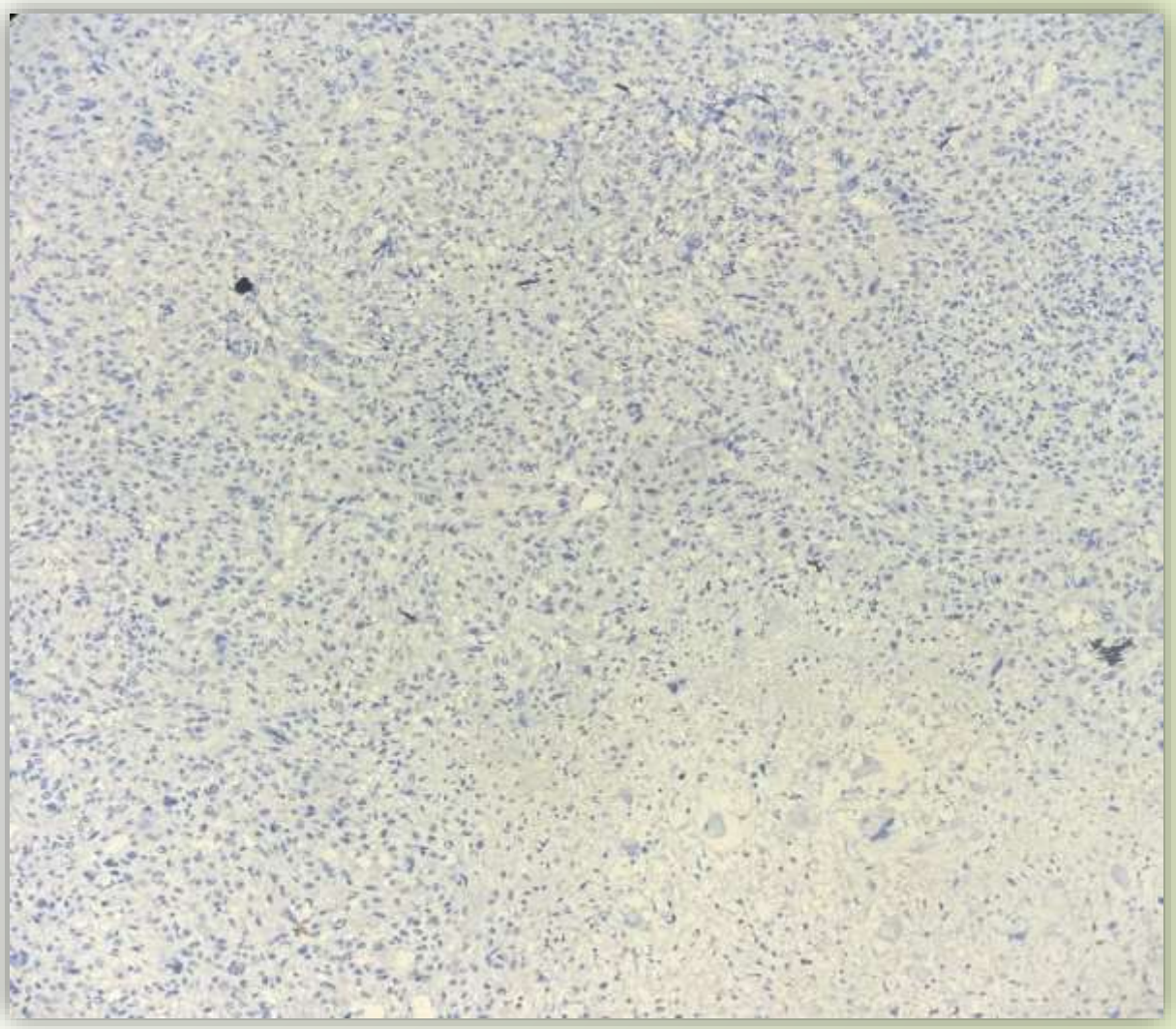
- Differential diagnosis:1) Carcinosarcoma

2) Sarcomatoid carcinoma

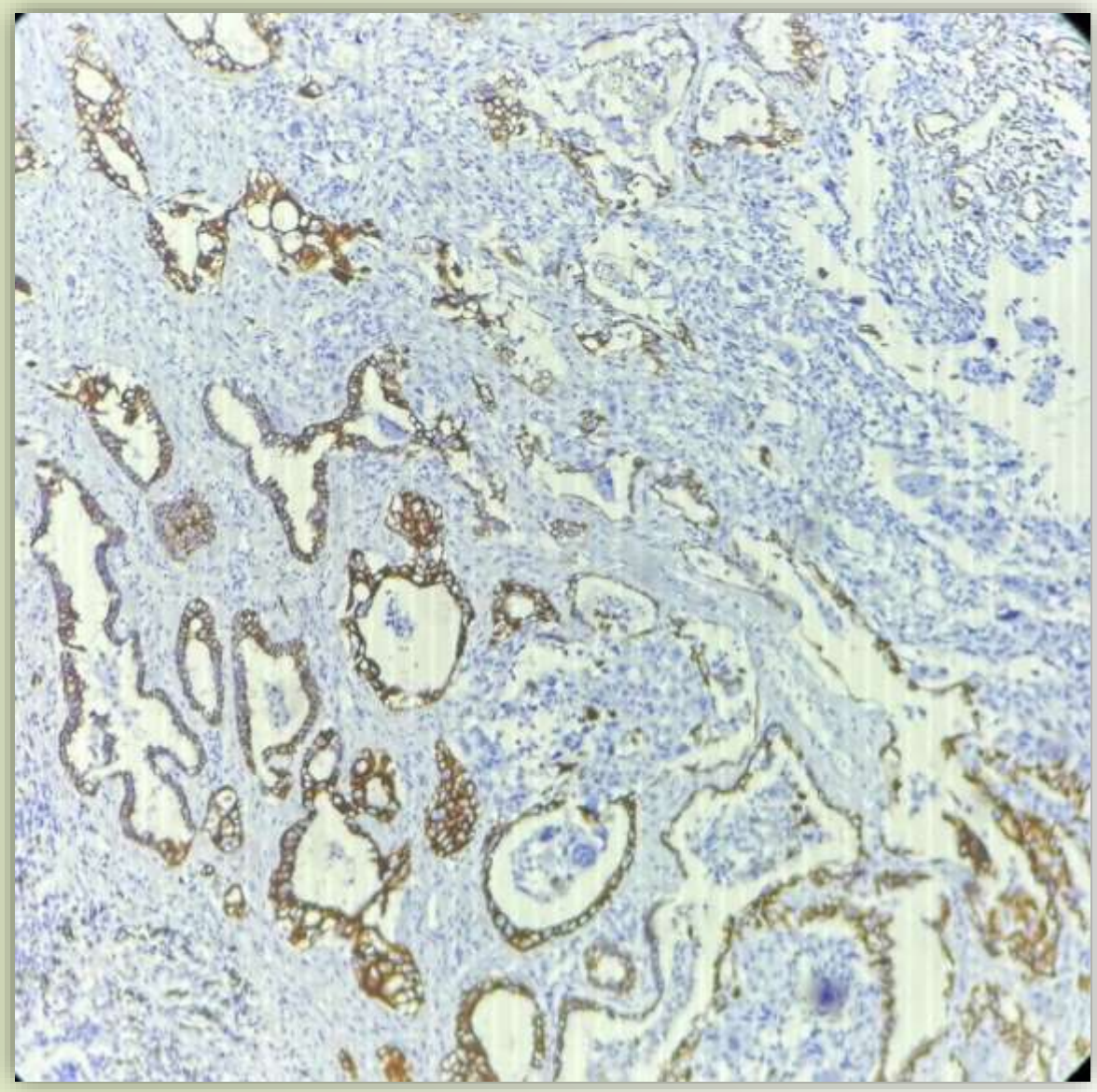
IHC FINDINGS :



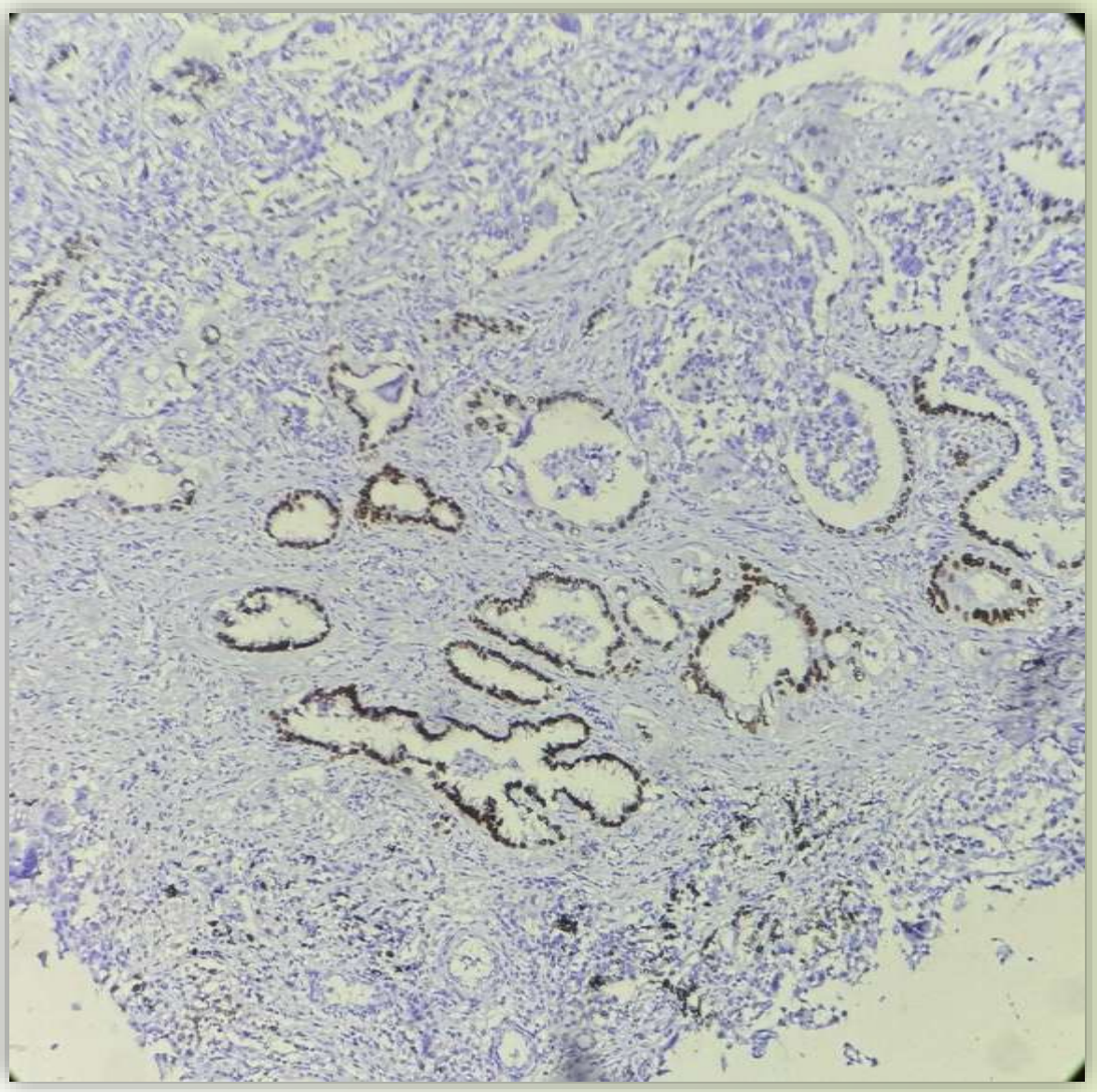
Vimentin – Diffusely positive in sarcomatous component



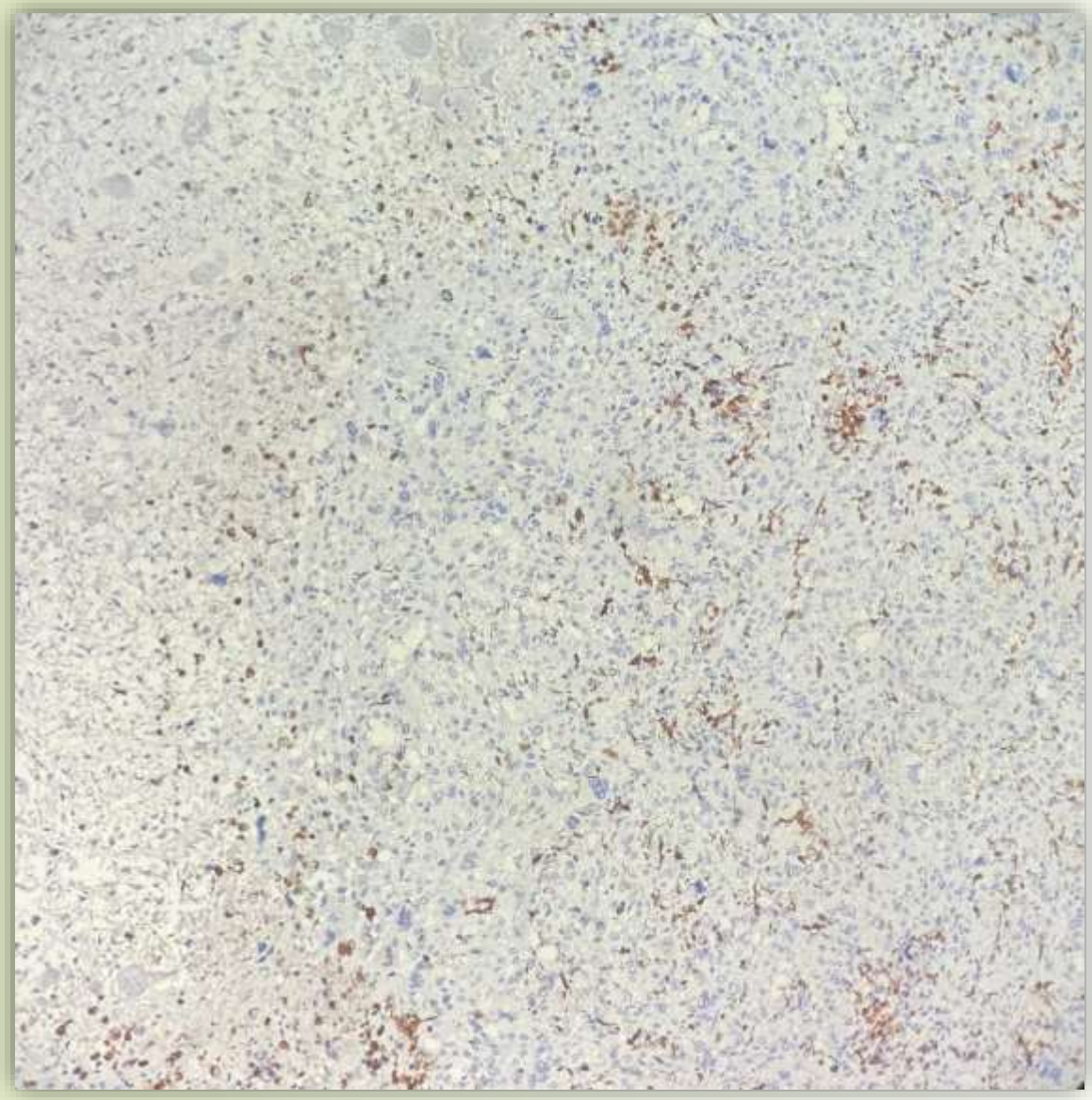
PAN CK- Negative in sarcomatous component



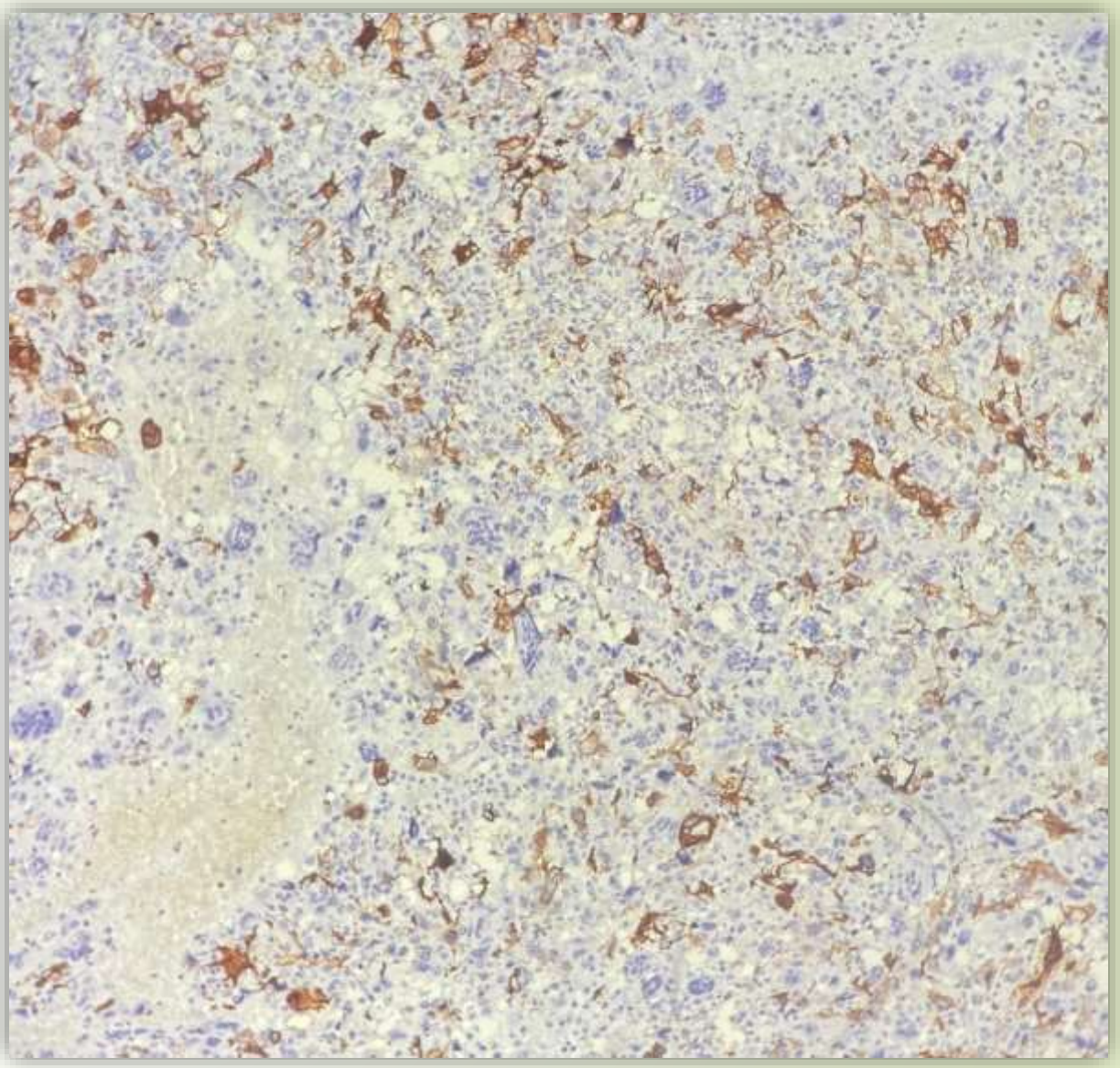
CK 7 – Positive in adenocarcinoma component. Negative in sarcomatous component



TTF1 - Positive in adenocarcinoma component. Negative in sarcomatous component



S100 - Focal positivity in sarcomatous component



SMA - Focal positivity in sarcomatous component

FINAL DIAGNOSIS

Carcinosarcoma of right lung lower lobe with free margins and negative lymph nodes.

Pathologic stage classification – pT3 pN0 pM not applicable.

DISCUSSION

CARCINOSARCOMA

- It is a malignant tumour consisting of non-small cell carcinoma (NSCC) components (usually squamous carcinoma or adenocarcinoma) combined with sarcomatous elements.
- The presence of heterologous elements helps distinguish carcinosarcoma from other types of cancer.
- Extensive tissue sampling is often needed to identify these components, and the classification of the tumor depends on the specific elements present.
- *Localization* : Tumours are central(m/c), endobronchial or peripheral.
- *Clinical features* : Cough, Hemoptysis, Chest pain.

- *Epidemiology :* Rare tumor, < 0.2% of lung cancers with M: F ratio of 7:1, occurs at the median age of 65 years.
- *Etiology :* Either current or former heavy smokers.
- *Immunohistochemistry:*

1. **Carcinomatous IHC Markers**: Adenocarcinoma: Positive for TTF1 and napsin A. Squamous carcinoma: Positive for p40.
2. **Sarcomatous IHC Markers**: Rhabdomyosarcoma: Desmin and myogenin positive. Chondrosarcoma: S100 positive. Caution needed to avoid overinterpreting staining in undifferentiated cells.
3. **Spindle Cell Areas**: May or may not stain for cytokeratin. Typically negative for TTF1, napsin A, and p40/p63.

Differential diagnosis :

1. Pleomorphic Carcinoma: Lacks heterologous elements (no sarcomatous components).
2. Pulmonary Blastoma: Shows fetal adenocarcinoma (β-catenin nuclear-positive) and blastema-like areas.
3. Sarcomas: May have high-grade epithelioid areas, but no gland formation or keratinization.

- *Prognosis :*

  They have a poor prognosis due to their presentation at an advanced stage (high T and TNM stage).

  However, surgical resection of localized disease can improve prognosis.

REFERENCE:

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4. Tanimoto A, Takeuchi S, Kotani H, Yamashita K, Yamada T, Ohtsubo K, Ebi H, Ikeda H, Yano S. Pulmonary carcinosarcoma showing an obvious response to pazopanib: a case report. BMC Pulmonary Medicine. 2018 Dec;18:1-4.

THANKYOU