

Bronchial Adenocarcinoma With Co-Existent Pulmonary Mycosis

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Case history – clinical details

- Male, 58 Years, smoker – indeterminate period
- No significant co-morbidities
- No chronic symptomatology / red flag symptoms
- No chronic cough, haemoptysis, anorexia
- DGH presentation with atypical pneumonia

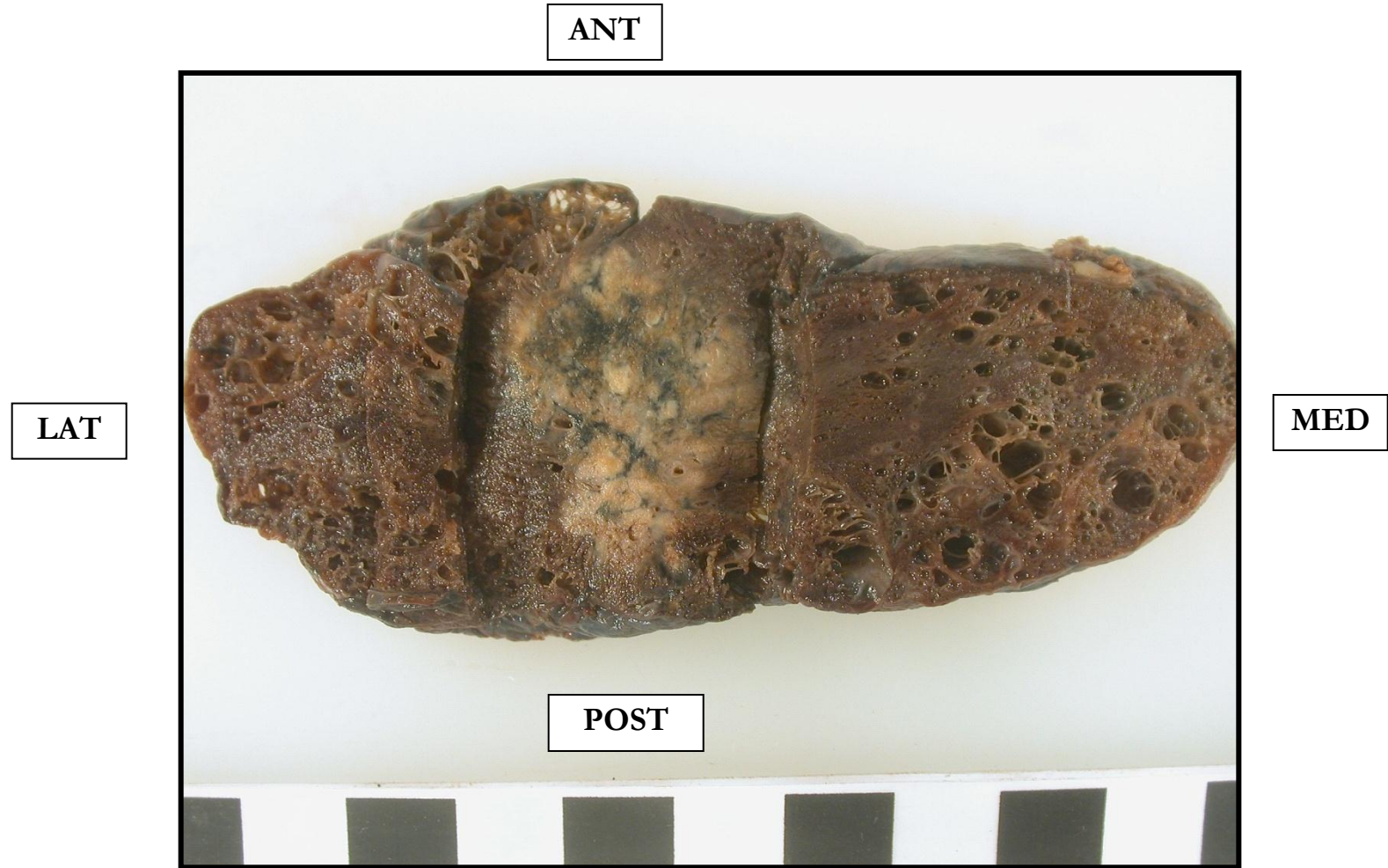
- Investigations: CXR - Focal defined shadow RUL
 CT/PET – ‘Hot’ mass RUL

- Surgical resection: Right upper lobectomy

Macroscopic description

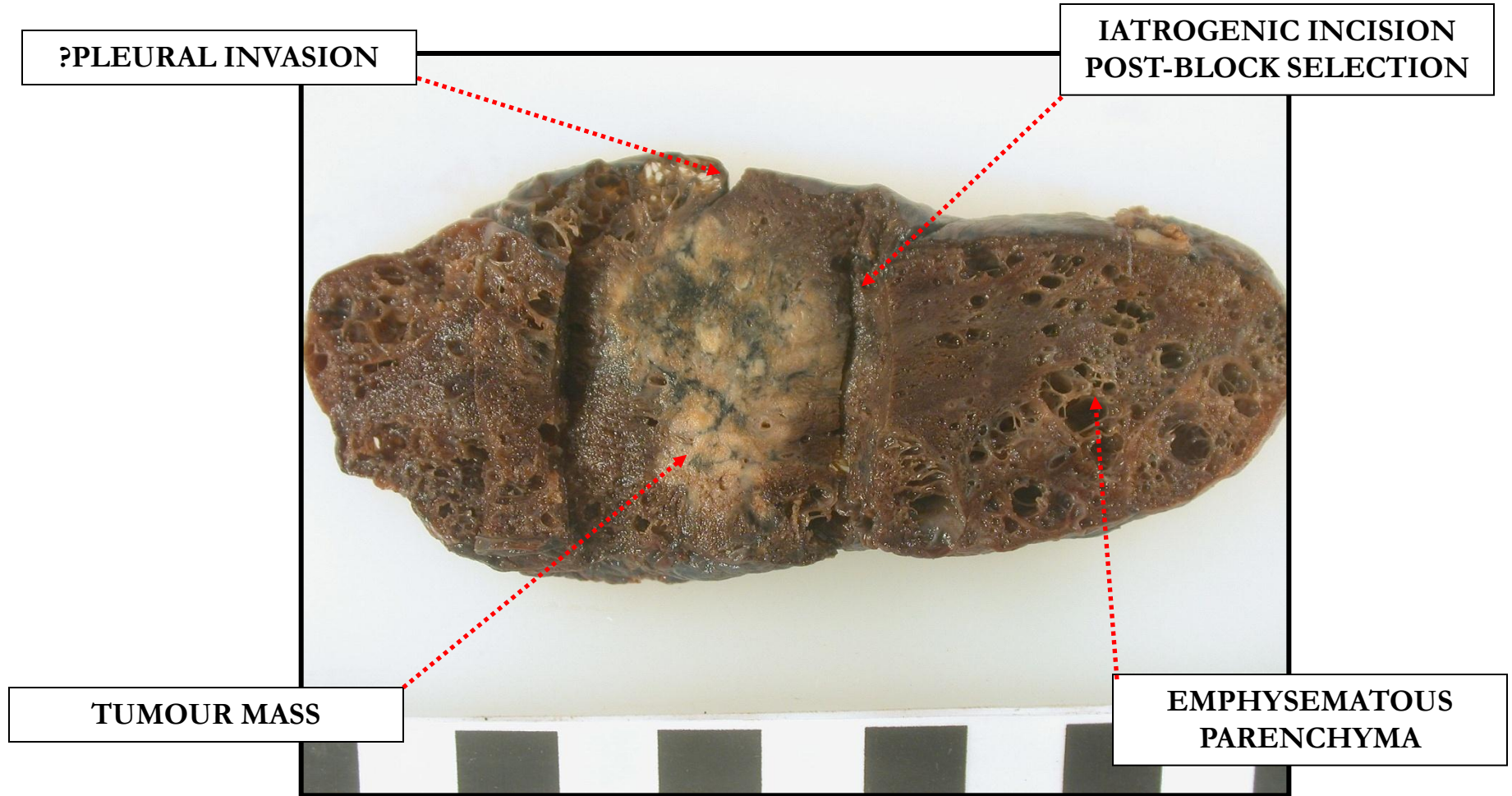
- Right upper lobe of lung, 15cm x 12cm x 4.5cm
- Multiple apical pleural adhesions
- Specimen sliced 15 transverse slices (cranial – caudal)
- Apical infiltrative grey / white tumour, 2.5cm x 2.5cm x 2.8cm
- ?Visceral pleural penetration
- Distal to tumour parenchymal emphysematous change
- Macroscopic margin clearance = 3.5cm
- Lymph nodes = 20 (Hilar / Paratracheal / Intralobar)
- Maximal nodal diameter = 1.5cm

Macroscopic photography



APICAL SLICE (3) INFERIOR ASPECT – POST BLOCK EXCISION

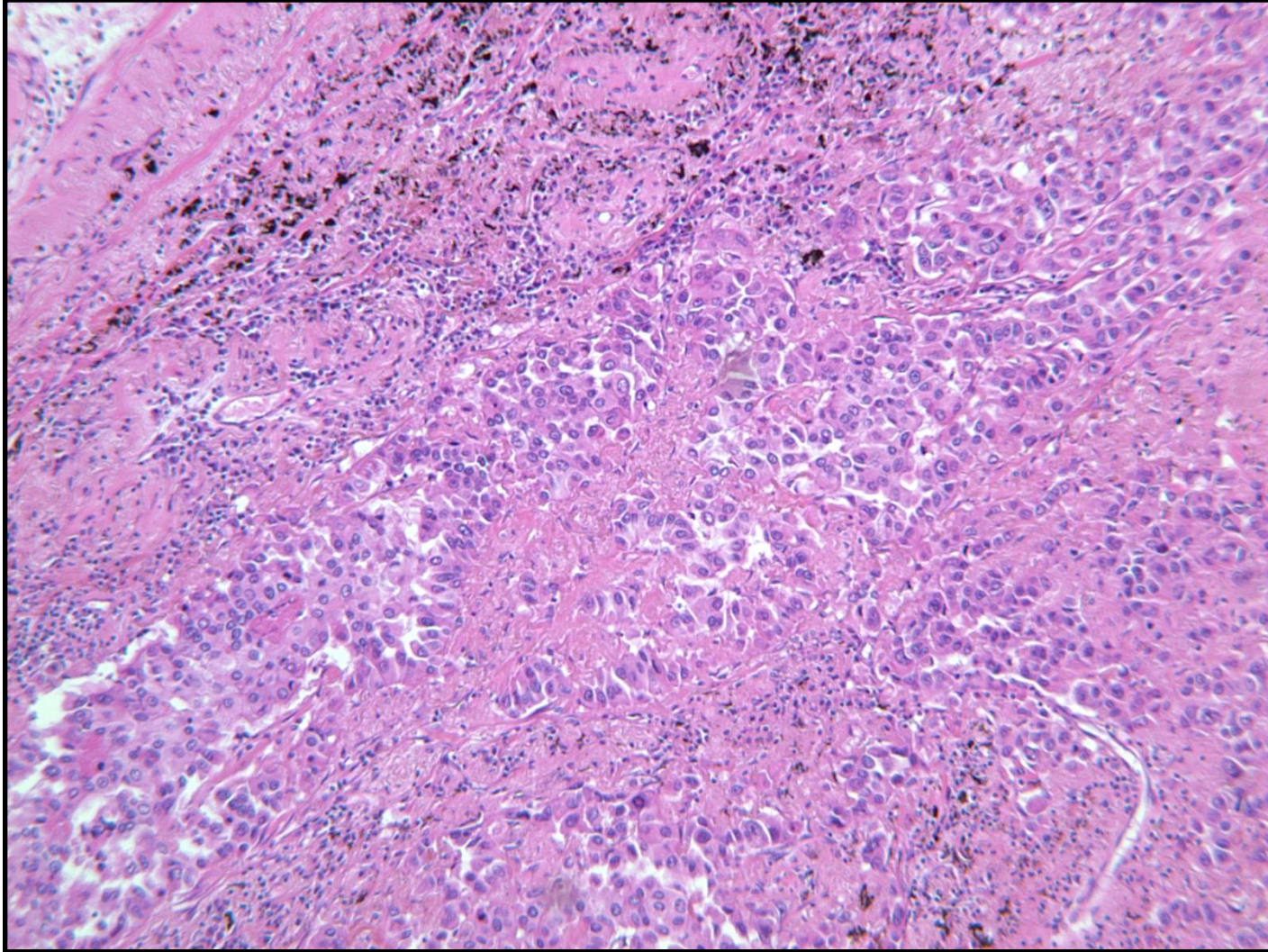
Macroscopic photography



Microscopic description

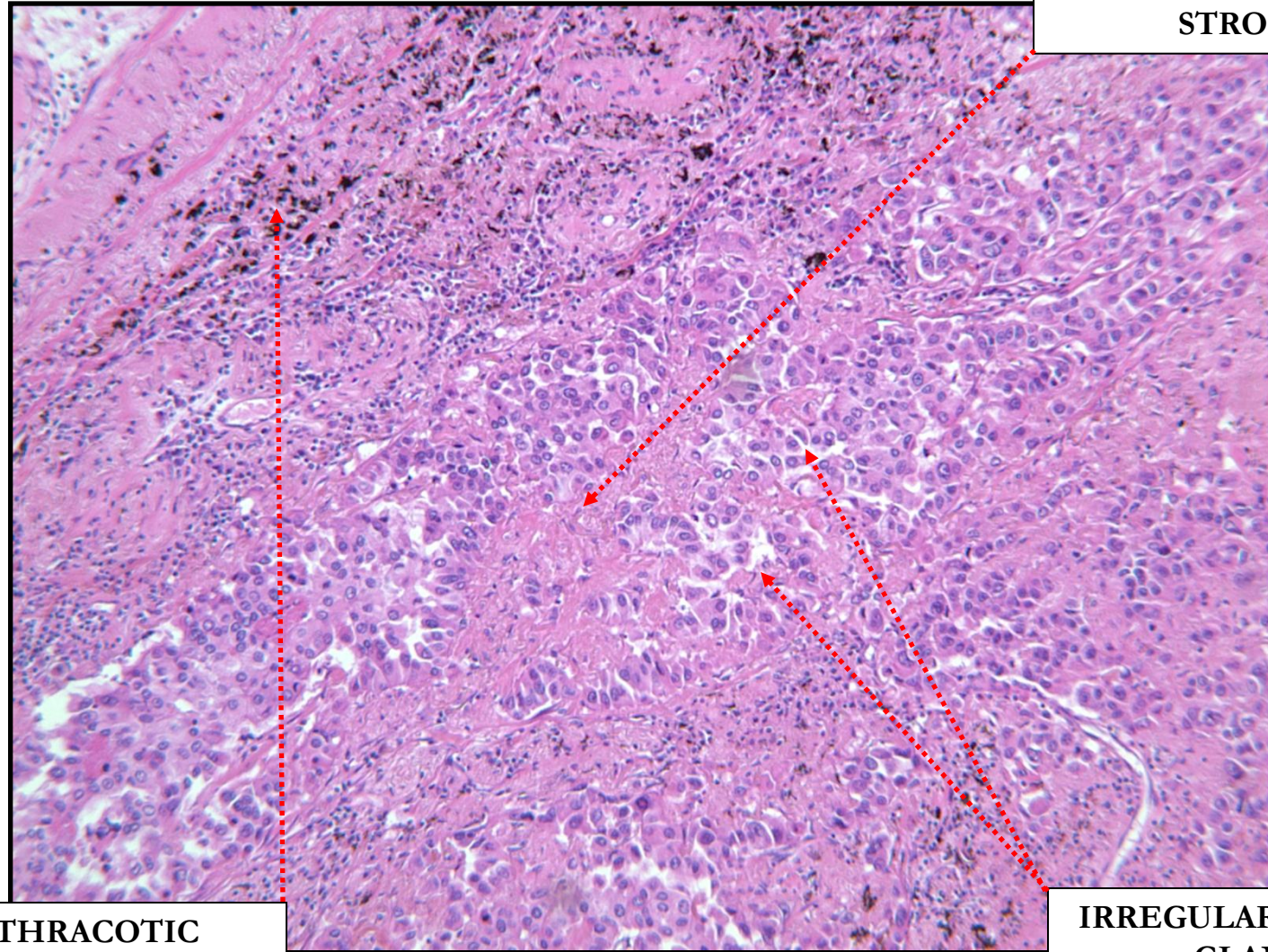
- Invasive adenocarcinoma with areas of moderate to poor differentiation
- Invasion through pleura into adjacent fat up to chest wall margin
- Aspergillus-like fungal hyphae present within necrotic fibrocollagenous tissue
- Adjacent lung parenchyma emphysematous
- All harvested nodes clear of tumour

Microscopic images



H&E (x 10 magnification)

Microscopic images



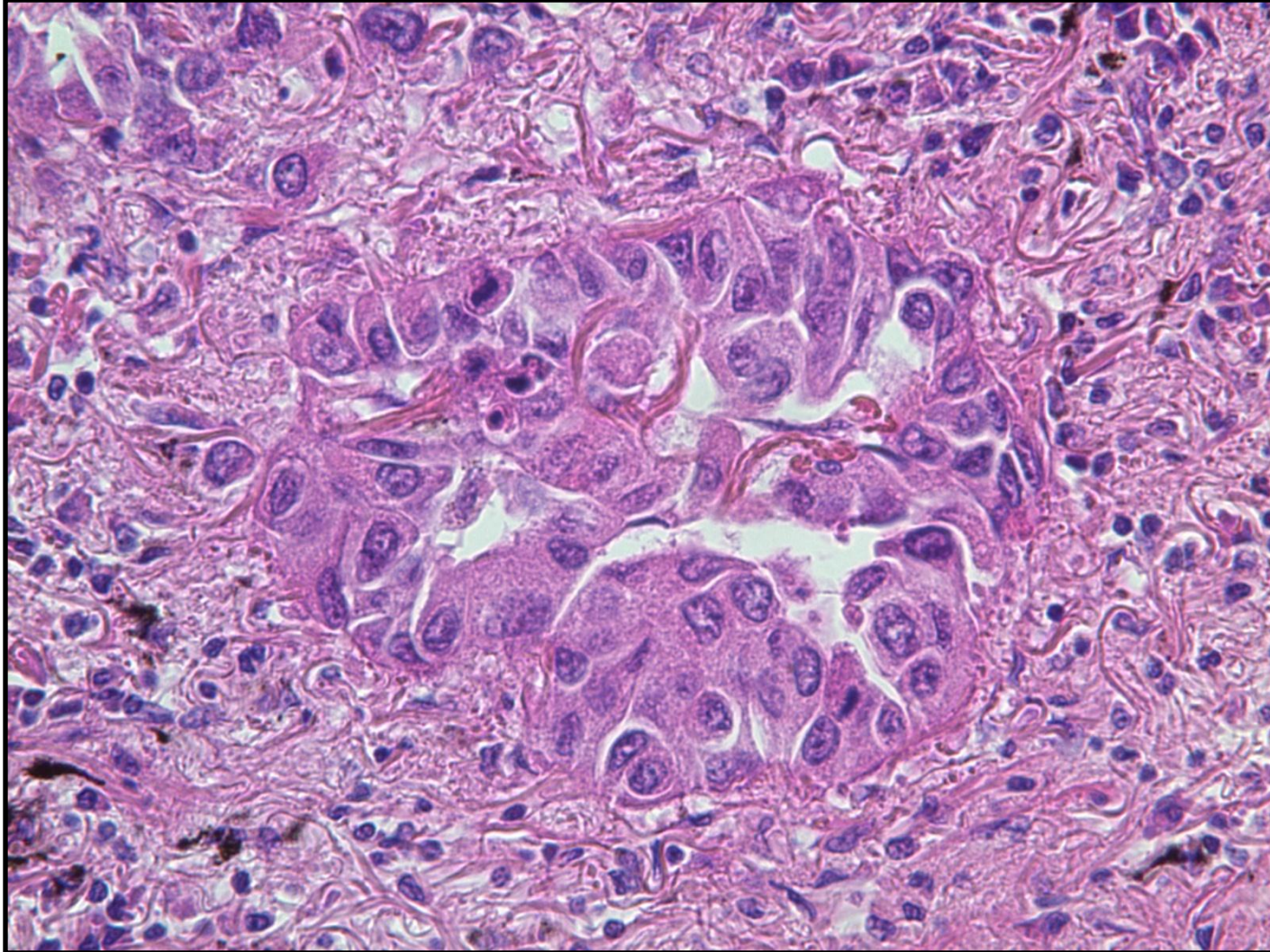
**DESMOPLASTIC
STROMA**

**ANTHRACOTIC
MACROPHAGES**

**IRREGULAR INVASIVE
GLANDS**

H&E (x 10 magnification)

Microscopic images

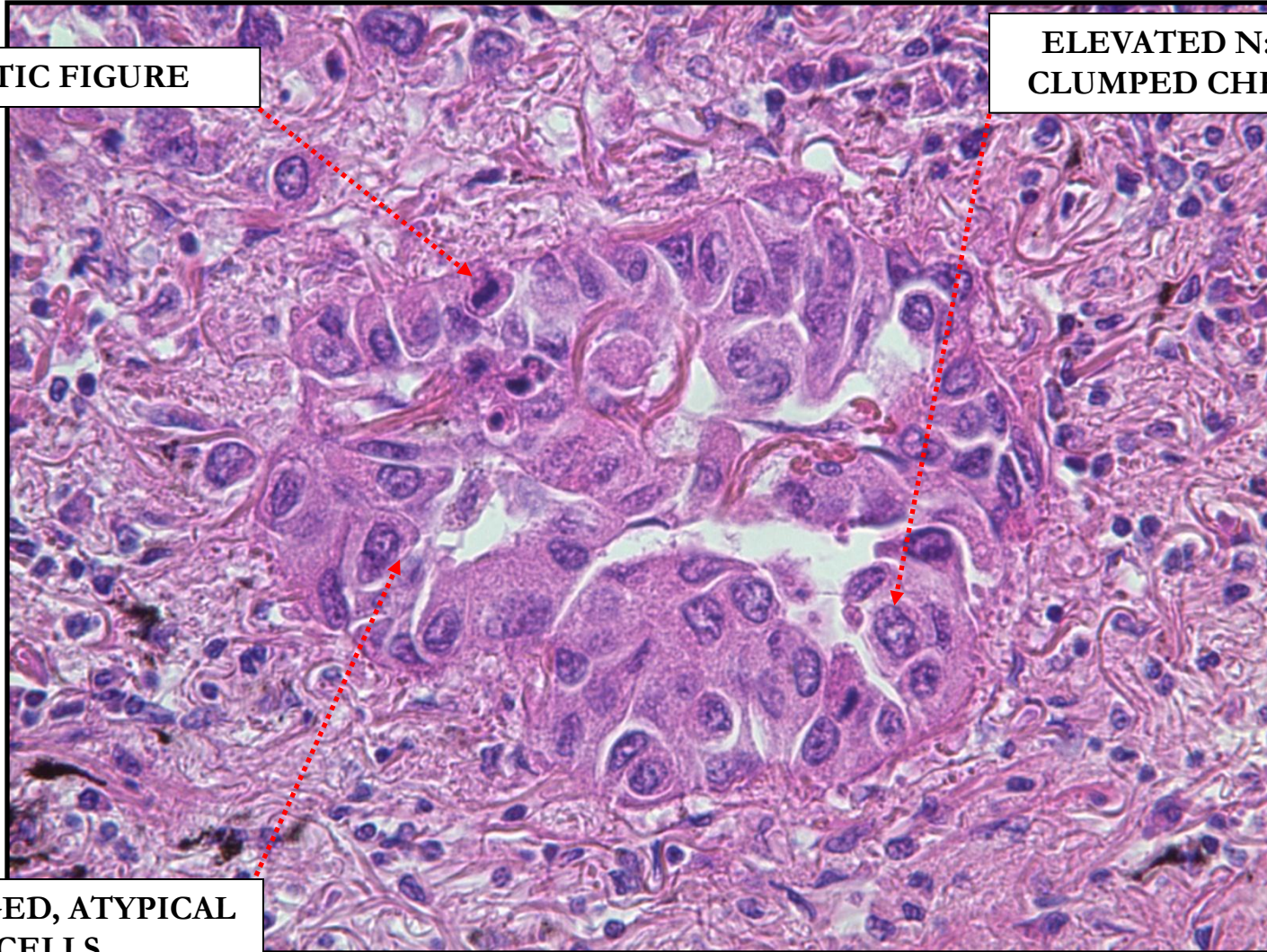


H&E (x 40 magnification)

Microscopic images

MITOTIC FIGURE

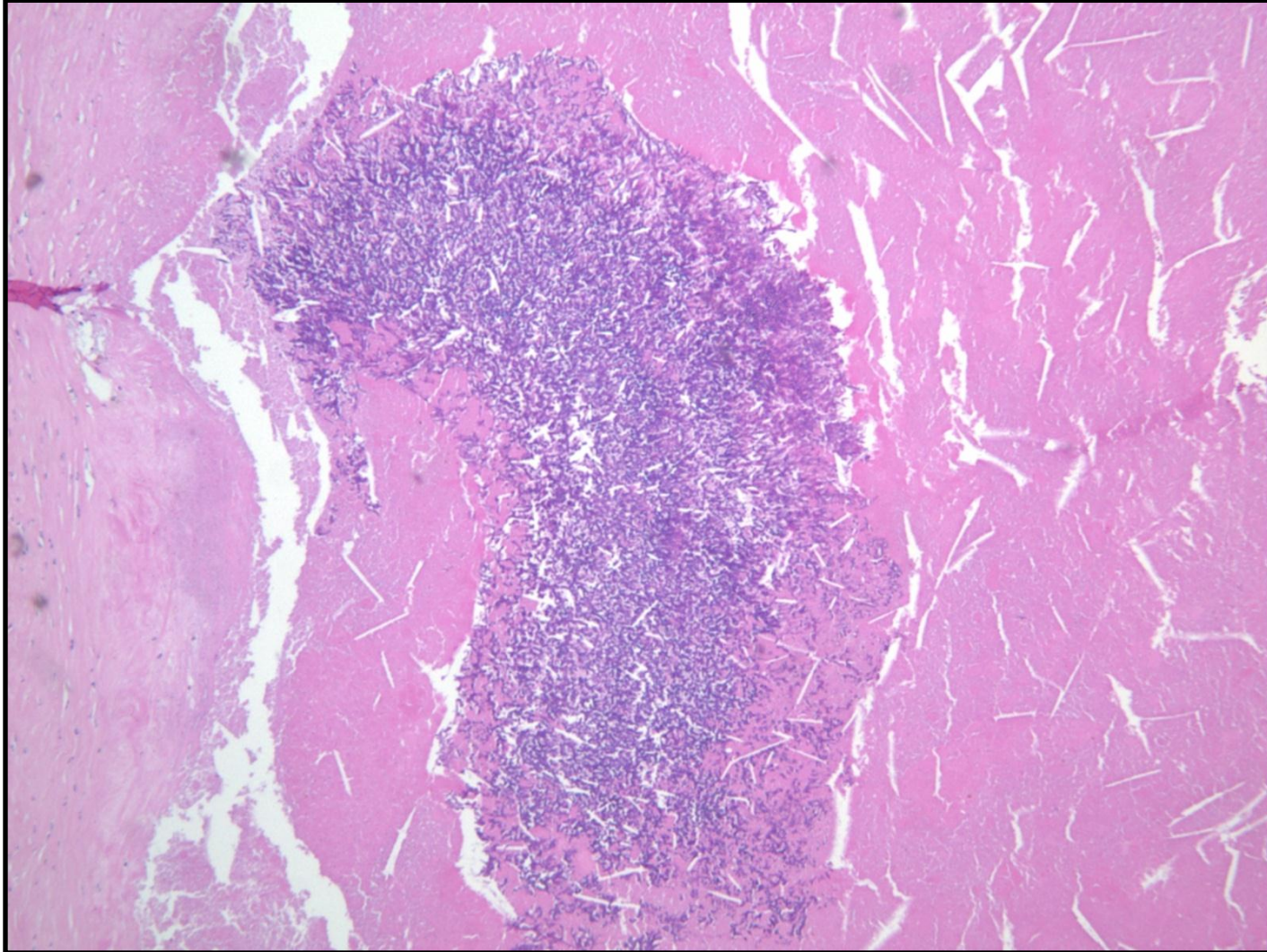
ELEVATED N:C RATIO
CLUMPED CHROMATIN



ENLARGED, ATYPICAL
CELLS

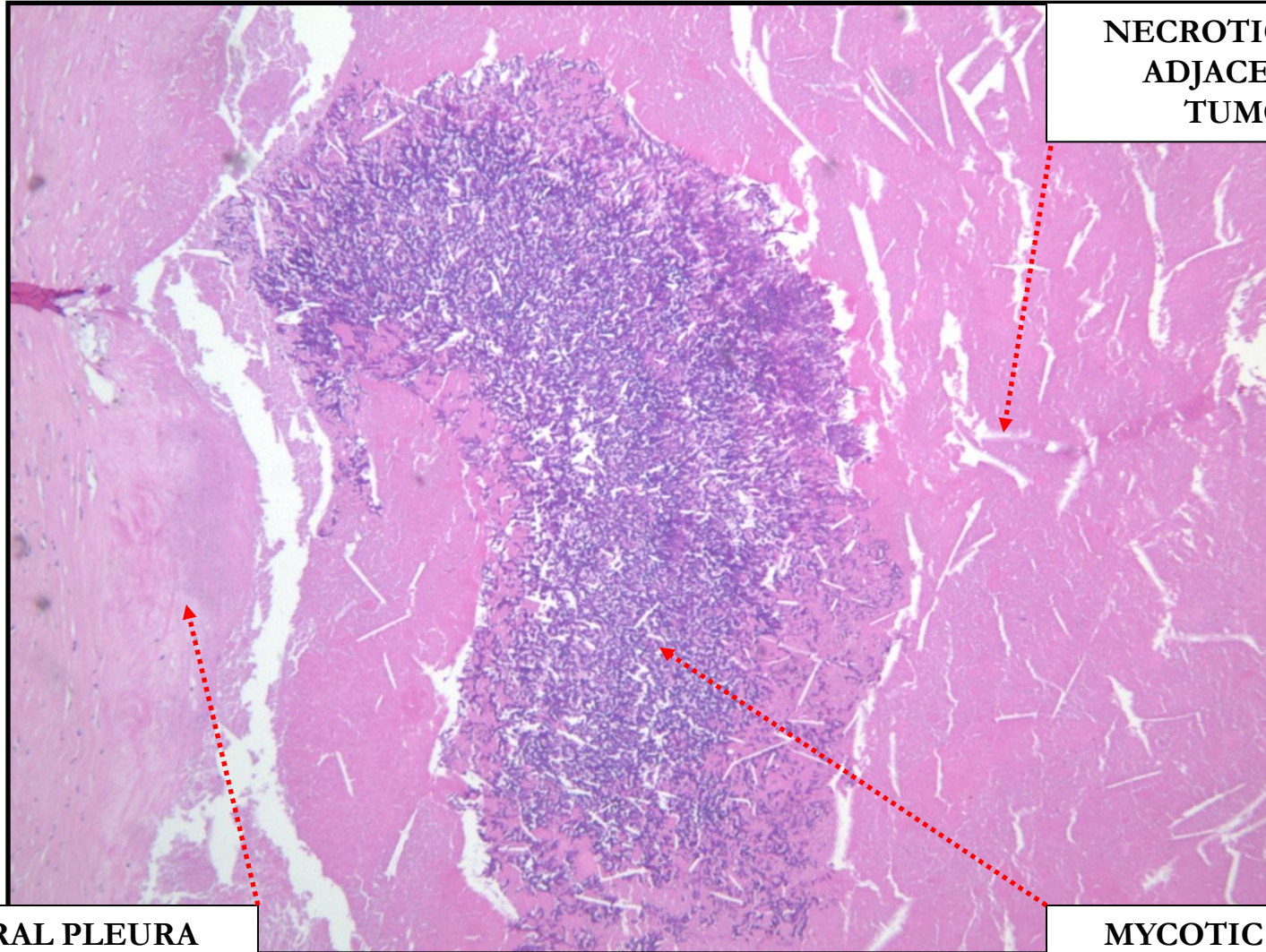
H&E (x 40 magnification)

Microscopic images



H&E (x 20 magnification)

Microscopic images



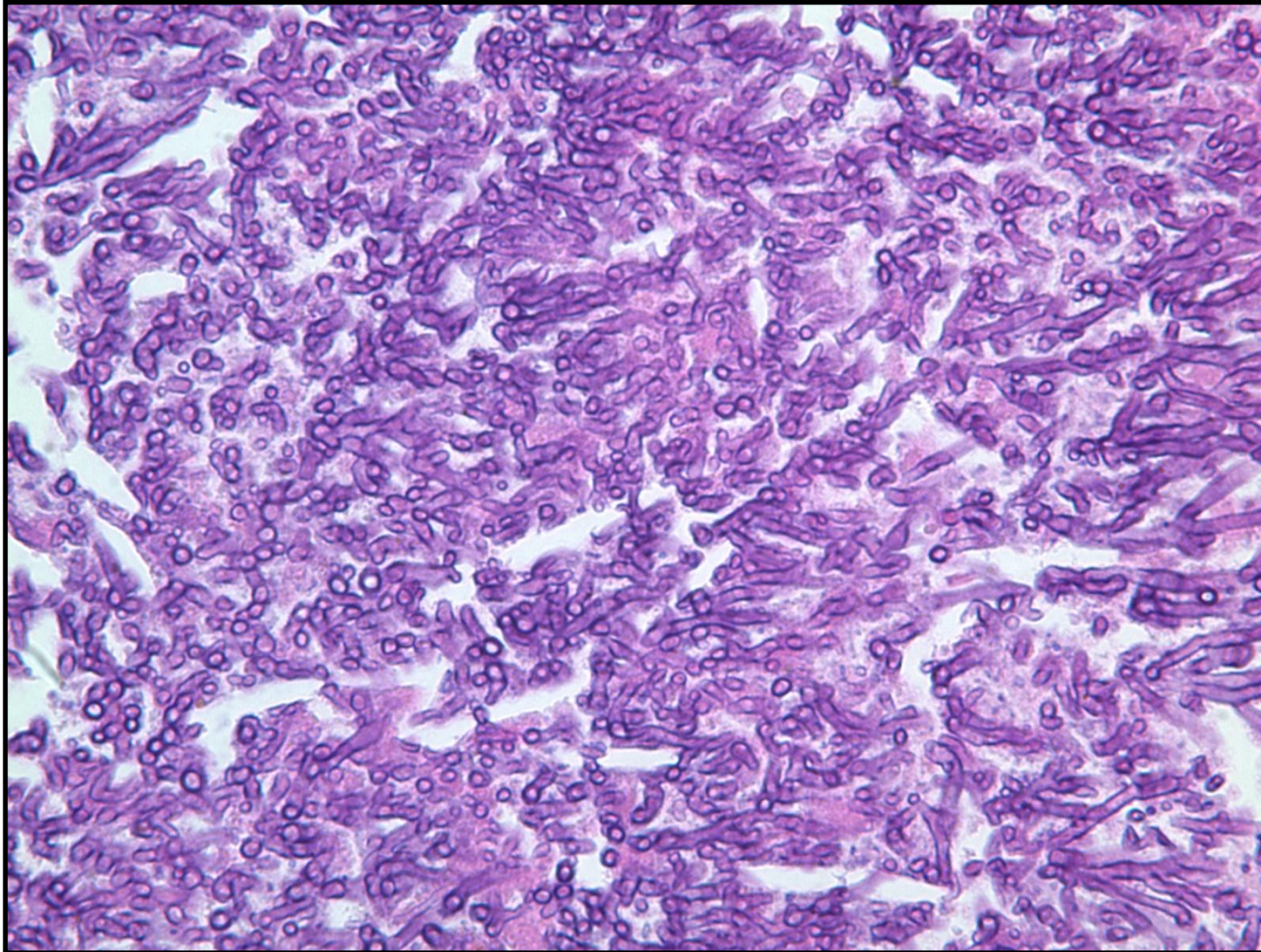
**NECROTIC DEBRIS
ADJACENT TO
TUMOUR**

VISCERAL PLEURA

MYCOTIC COLONY

H&E (x 20 magnification)

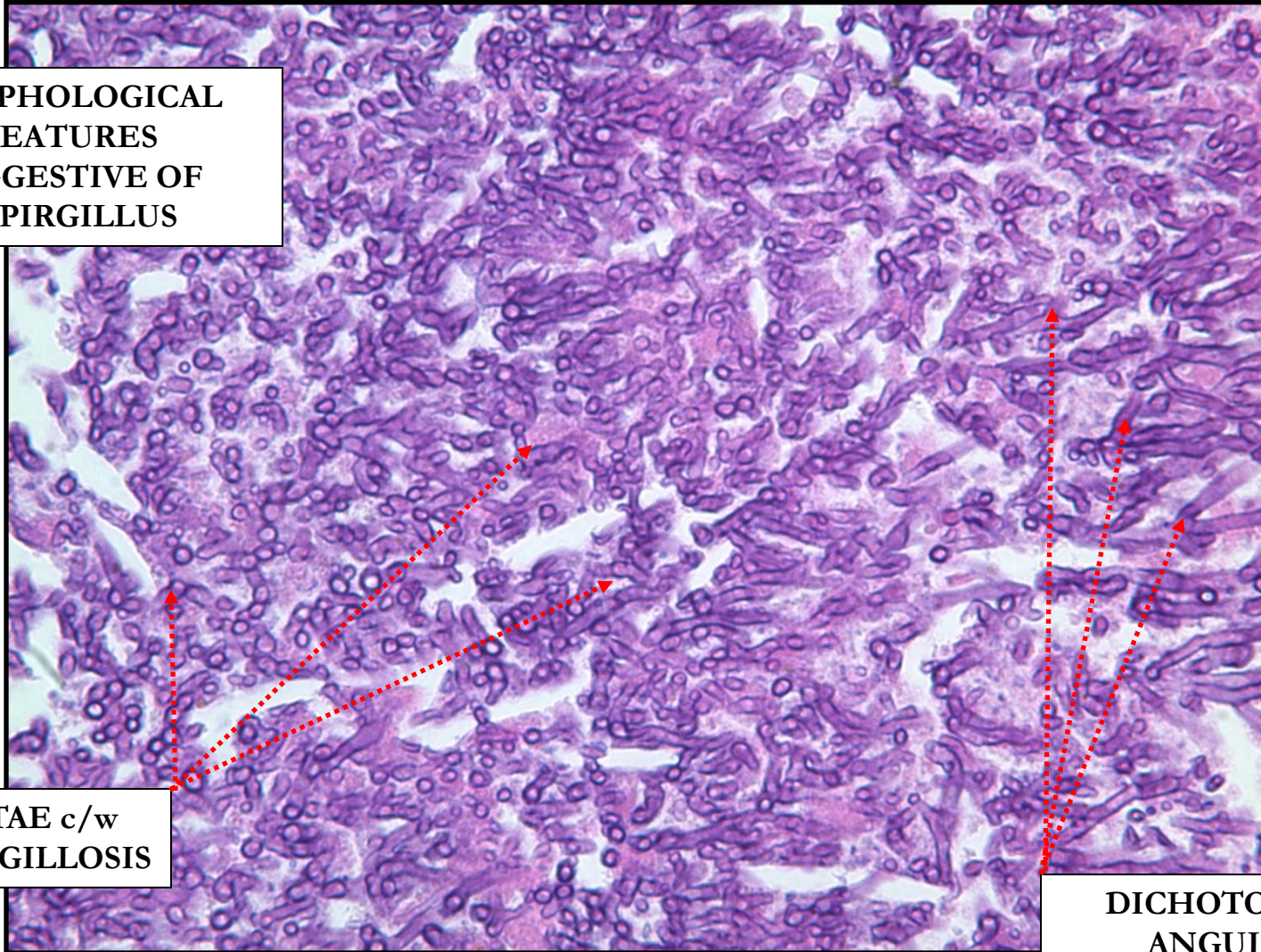
Microscopic images



H&E (x 40 magnification)

Microscopic images

**MORPHOLOGICAL
FEATURES
SUGGESTIVE OF
ASPIRGILLUS**



**SEPTAE c/w
ASPERGILLOSIS**

**DICHOTOMOUS &
ANGULATED
BRANCHING C/W
ASPERGILLOSIS**

H&E (x 40 magnification)

Discussion

- Pulmonary malignancy with invasive mycosis rare
- Aspergillosis most commonly described
- Suspected here but morphological identification unreliable
- Similar hyphal morphology seen in *Zygomycetes* and *Hyalohyphomycetes*. Genus *candida* may also mimic
- Mechanism ?colonisation of obstructed bullous air spaces
- Definitive identification made by ELISA (in this case pending)
- Invasive aspergillosis reported in patients with profound immunosuppression (reactive or iatrogenic) and malignancy

Further reading

- Itano *et al.* Non-small cell lung cancer coexisting with pulmonary aspergilloma. *Jpn J Thor Cardio Surg.* 2005; 53(9): 513-516
- Maschmeyer G., Ruhnke M. Update on fungal treatment of *Candida* and *Aspergillus* infections. *Mycoses.* 2004; 47:263-276
- Salfelder. Atlas of Fungal Pathology. Current Histopathology. Vol 17. Kluwer Academic Publishers. 1990. P38 – 42.
- Kumar V., Abbas A., Fausto N. Robbins & Cotran's Pathologic Basis of Disease. 2005. 7th Edition. Saunders. 397-401