

## Unit II – Problem 7

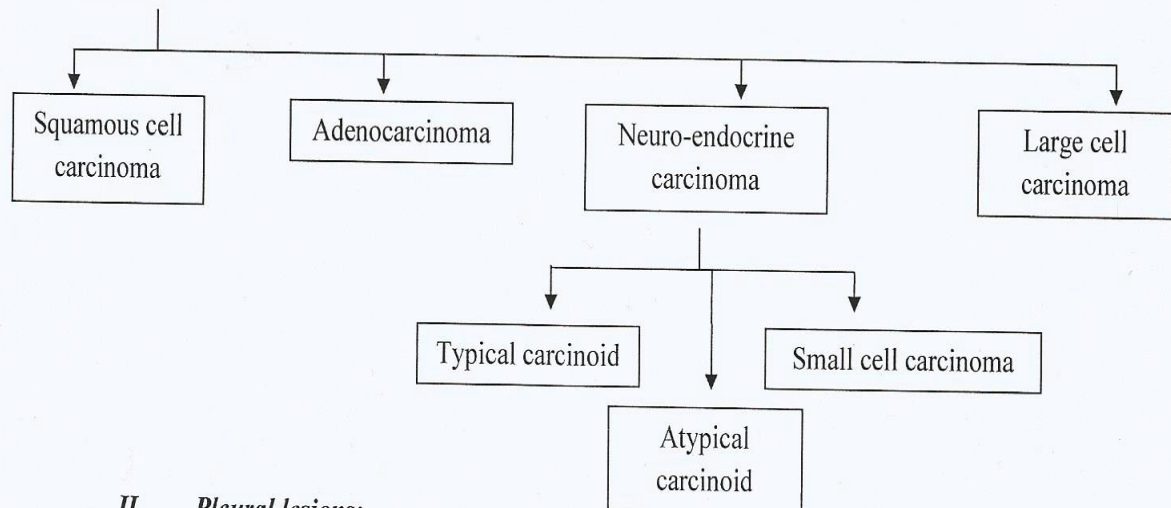
### Respiratory System Pathology: Lung Tumors & Pleural Lesions

Robbins Basic Pathology 9<sup>th</sup> edition (pages 505-512) + Dr. Eman AlJuffairi Slides

#### I. Lung Tumors

Most important cause of cancer-related deaths in industrialized countries.

Classification:



#### II. Pleural lesions:

##### Malignant Mesothelioma:

- Rare cancer of mesothelial cells
- Usually arising in the **pleura**, but also occurs much less commonly in the peritoneum and pericardium
- Related to occupational exposure to **asbestos**
- The latent period is long (25 to 40 yrs)
- Asbestos is not removed or metabolized → lifetime risk does not diminish over time → preferentially gather near mesothelial cell layer → generate reactive oxygen species → DNA damage
- Often preceded by extensive pleural fibrosis & plaque formation
- Begin in a localized area & then spread widely by contiguous growth or by diffusely seeding the pleural surfaces
- At autopsy, the affected lung typically is ensheathed by a yellow-white, firm layer of tumor that obliterates the pleural space

- **Histologically, there are three patterns:**
  - 1- **Epithelioid:** cuboidal cells line tubular and microcystic spaces, into which small papillary buds project; most common pattern and likely to be confused with a pulmonary adenocarcinoma
  - 2- **Sarcomatoid:** spindled cells grow in nondistinctive sheets
  - 3- **Biphasic:** having both sarcomatoid and epithelioid areas

Lung Cancer	Association	Location	Precursor lesions	Histological Appearance	Additional notes
<b>Squamous Cell Carcinoma</b>	Smoking	Centrally in the major bronchi	Squamous metaplasia → dysplasia → carcinoma in situ	Keratin pearls & intercellular bridges (in cytological smears of brushings)	May undergo central necrosis → cavitations (bcz its discovered lately)
<b>Adenocarcinoma</b>	Most common in non-smokers & females	Peripheral (from terminal bronchioles)	AAH → AIS → minimally invasive AC → invasive AC	Gland or Mucin	Has 4 types: acinar, mucinous, papillary, & solid
<b>Neuro-endocrine Tumors:</b>					
<b>(Typical) Carcinoid:</b> cells that contain a dense-core neurosecretory granules	-	Originate in main bronchi	-	Regular round nucleus with "salt-&-pepper" chromatin To differentiate between typical and atypical carcinoid: we check for mitosis & necrosis: -Typical: has rare/absent mitosis -Atypical: has ↑ mitosis &/or necrosis	Occur as a part of MEN syndrome & rarely cause carcinoid syndrome (flushing, diarrhea, cyanosis)
<b>Atypical Carcinoid</b>	-	-	-	Necrosis & azzopardi effect + little cytoplasm and ↑ N/C ratio	Paraneoplastic syndrome (neoplasms that secret hormones in ↑ amounts)
<b>Small (Oat) Cell Carcinoma</b>	Smoking	Aggressive w/ early mediastinal lymph node involvement	-	Undifferentiated cells with large nuclei & moderate amount of cytoplasm	-
<b>Large Cell Carcinoma</b>	Mixture of everything (can be central or peripheral)	-	-	-	-