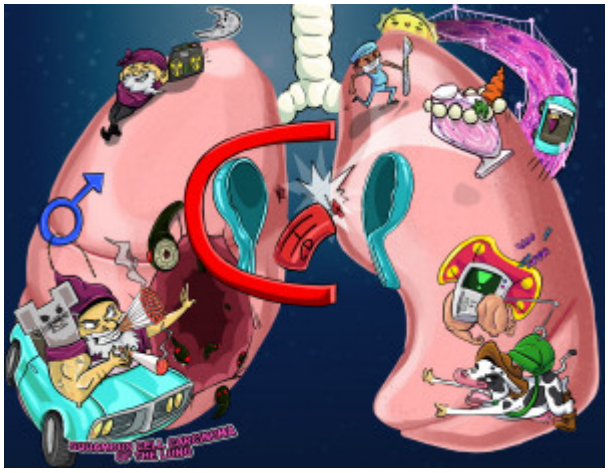
Squamous Cell Carcinoma of the Lung

Lung carcinoma is typically divided into two categories, small cell carcinoma and non-small cell carcinoma. Non-small cell carcinoma subtypes include adenocarcinoma, squamous cell carcinoma, large cell carcinoma and carcinoid tumor. Squamous cell carcinoma of the lung is more common in males and has a strong correlation with smoking. It typically arises from the central portion of the lung and is characterized as a cavitating lesion extending to the hilum. It is important to note that this tumor may produce PTHrP causing hypercalcemia. Histologic diagnosis of squamous cell carcinoma is based upon the presence of keratin pearls or intercellular bridges. In the early stages, treatment involves surgical resection. In the later stages, treatment involves radiation and chemotherapy.



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Characteristics

Strong Correlation with Smoking

Strong-arm Smoking Cigarette

Squamous cell carcinoma of the lung is closely correlated with a history of tobacco smoking.

More Common in Men

Male Sex-symbol

This cancer is more common in males than females.

Central Location

Center of Lungs

Squamous cell carcinoma of the lung is typically located in the central portion of the lung and usually arises from larger bronchi. Recall that small-cell lung carcinoma also arises centrally.

Cavitating Lesion Extending to Hilum

Cavitating Leeches Toward Helium-in-Hilum

This tumor is commonly located in the central portion of the lung. Large tumors may undergo central necrosis, resulting in a cavitating lesion. The cavitating lesion can be seen on imaging as extending to the hilum.

PTHrP Causes Hypercalcemia

Parachuting-thigh-droid-proteins and Hiker-calcified-cow

This tumor may secrete parathyroid hormone-related protein (PTHrP), which acts similarly to parathyroid hormone (PTH). Recall that PTH acts to increase plasma calcium levels and decrease plasma phosphate levels. When the tumor releases PTHrP, it can lead to hypercalcemia and hypophosphatemia. Hypercalcemia may be the first sign of malignancy in some patients.

Diagnosis

Keratin Pearls

Keratin Pearls with Carrot Pearls

Histologic diagnosis of squamous cell carcinoma is based upon the presence of keratin production by tumor cells or intercellular desmosomes, also known as intercellular bridges. The hallmark of squamous cell carcinoma is evidence of keratinization, which may present as the formation of keratin pearls.

Intercellular Bridges

Bridge of Cells

Histologic diagnosis of squamous cell carcinoma is based upon the presence of keratin production by tumor cells or intercellular desmosomes also known as intercellular bridges. These bridges link adjacent cells and are a diagnostic feature of squamous cell carcinoma.

Treatment

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Surgical Resection (if Early Stage)

Surgeon

Non-small cell lung cancers that present early in the disease process are generally treated upfront with surgical resection. Patients with metastatic disease outside of the chest are not candidates for surgical resection. Even with a complete resection, recurrence is still possible.

Chemotherapy and Radiation (if Later Stage)

Chemotherapy-head-wrap and Radiation-radio

For patients who present early in the disease process, radiation therapy is an important adjunct to surgery. For patients who present in later stages of squamous cell lung cancer, radiation and chemotherapy are the mainstays of treatment.

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