Pancoast Tumor

Pancoast tumor is an apical lung tumor that is most commonly a non-small lung cancer. Pancoast tumors can manifest with axillary and shoulder pain, hoarseness, horner syndrome, superior vena cava syndrome, sensorimotor deficits, and hemidiaphragmatic paralysis.



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Characteristics

Apical Lung Tumor
Ape Lung Tumor-guy
Pancoast tumor is the name given to lung cancer that is located in the apex or superior sulcus. It commonly arises in the apical pleuropulmonary groove, superior to the first rib. Symptoms are typically due to mass effect on surrounding structures.

Non-small Cell Lung Cancer
Nun-small Lung Tumors
80-85% of Pancoast tumors are histologically non-small cell lung cancer. A squamous cell origin is the most predominant type of NSLC found. Other tumors can also present as Pancoast tumors such as lymphomas, thyroid carcinoma, metastatic lesions, etc.

Clinical Features

Axillary or Shoulder Pain
Ax-armpit Pain-bolts and Shoulder Pain-bolts
55-60% of patients with a Pancoast tumor complain of severe pain in the shoulder which aggravates over time. It can be described as pain radiating toward the neck, axilla, anterior chest wall, or the medial part of the scapula along with the ulnar nerve distribution (C8-T1 nerve roots). Infiltration of the parietal pleura, endothoracic fascia, the bony skeleton of the apex, or brachial plexus can cause this pain.

Hoarseness
Horse-in-throat
Pancoast tumors can compress the recurrent laryngeal nerve which is responsible for innervating the muscles of the vocal apparatus. This compression can lead to hoarseness.

Horner Syndrome
Horny Pam
If a Pancoast tumor compresses the sympathetic chain or stellate ganglion, Horner syndrome (ptosis, miosis, and anhidrosis) can occur on the affected side. This is found in 30% of cases.

Superior Vena Cava Syndrome
Superior Vine Cave
Anteriorially, Pancoast tumor can compress brachiocephalic veins that anatomically continue to form the superior vena cava. Compression of the vena cava can lead to superior vena cava syndrome. This compression may cause venous engorgement of upper extremity and facial veins because blood cannot reach the heart. In severe cases, increased intracranial pressure can also occur.

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Sensorimotor Deficits

Sensor-and-motor Broken

Brachial plexus involvement is reported in about 15% of Pancoast tumor cases. This can result in sensorimotor deficits such as weakness, muscle atrophy, and paresthesias.

Hemidiaphragm Paralysis

Half-diaphragm-trampoline on Wheelchair

Hemidiaphragmatic paralysis occurs as a result of phrenic nerve compression. The phrenic nerve originates from the C3-5 cervical nerves in the neck and traverses the thorax to innervate the diaphragm. Dyspnea and paradoxical motion of the affected diaphragm can be seen.

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