

# Synchronous Multiple Primary Cancers of the Lung: The Rare Association of Non-Small Cell Carcinoma with Carcinoid Tumor

## INTRODUCTION

- Multiple primary lung cancers, either synchronous or metachronous, are unusual
- Cases of synchronous tumors with small cell and non-small cell lung carcinoma (NSCLC) (carcinoid) in the same patient are rarely reported in the medical literature
- Diagnosis will pose a challenge as multiple simultaneous tumors can be mistaken to be metastatic
- Knowing the histological types of these various tumors can dictate management and have prognostic implications

## CASE PRESENTATION

### History of Present Illness:

- 68-year-old female smoker presented for abnormal lung shadow found on routine radiological assessment.
- Follow-up chest CT revealed a left upper lobe nodule measuring 2.8-3.0 cm in diameter, with associated mediastinal adenopathy (Figure 1)

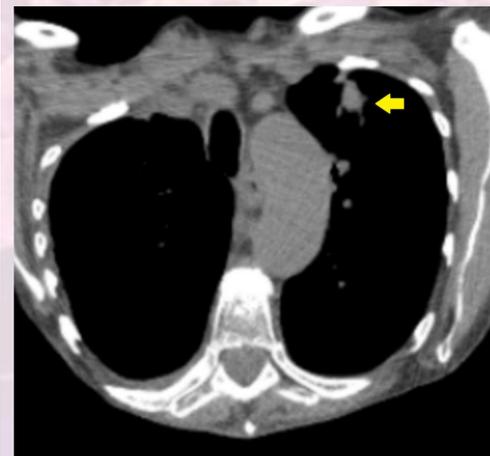
### Course/Management:

- She underwent a left medial assisted thoracic surgery, left upper lobectomy, and mediastinal lymph node dissection
- Left upper lobe nodule pathology revealed a 3cm low-grade neuroendocrine carcinoma (Figure 2)
- One lymph node was positive for metastatic non-keratinizing squamous cell carcinoma (Figure 3)
- Treatment: postoperative adjuvant chemotherapy with 2 cycles of cisplatin 70 mg/m<sup>2</sup> & gemcitabine 1,250 mg/m<sup>2</sup>
- Treatment stopped due to side effects but strict surveillance over the next 1 year with PET-CT every 3 months failed to show disease recurrence

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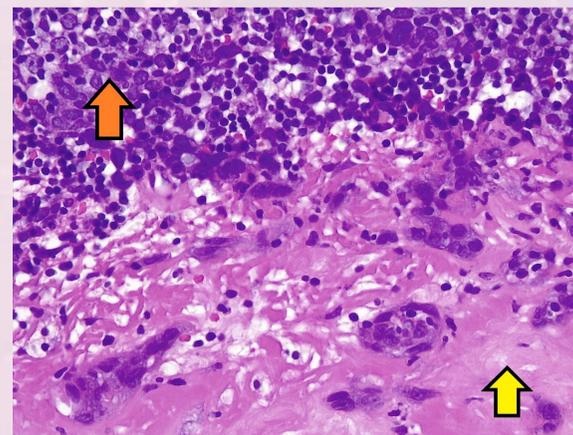
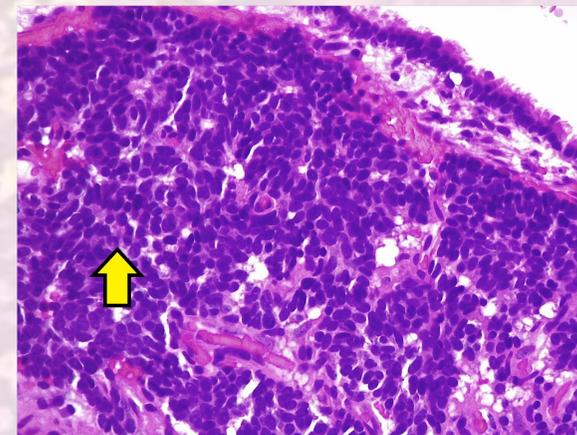
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**Fig 1. CT of the chest**

The yellow arrow pointing towards a lesion in the left upper lobe of the lung that is approximately 2.8-3.0 cm in diameter

**Fig 2. Carcinoid tumor lung, bronchial biopsy (hematoxylin and eosin stain)** Pulmonary carcinoid (typical) tumor showing solid nests of cells that are relatively large and uniform (yellow arrow) Pathological stage pT1bN0



**Fig 3. Pathological histology of squamous cell carcinoma, lymph node biopsy (hematoxylin and eosin stain)** Large polygonal cells of the squamous cell carcinoma (orange arrow) within an intracellular stroma (yellow arrow)

## DISCUSSION

- Pulmonary carcinoid tumors account for about 1%-2% of all lung tumors
- Phenomenon of “field cancerization” is applied to lung tissue, with carcinogens in tobacco damaging the lung mucosa and single clonal event resulting in a tumor that spreads within one or both lungs
- Distinction must be made between synchronous primary tumors and intrapulmonary metastases, as type dictates treatment
- Optimal management of these patients with multiple primary tumors is controversial
- Due to the rarity, the prognosis is unclear for combined NSCLC and carcinoid tumors
- Most reports agree that surgical resection, if feasible, is the treatment of choice, but further studies are needed to make this recommendation

## CONCLUSION

- Increased awareness/ rapid diagnosis/ sufficiently powered controlled clinical trials of patients with synchronous lung carcinoids are needed to outline optimal local or systemic treatment
- All synchronous tumors must be investigated, not assumed to be intrapulmonary metastasis, as early-stage tumors may be prone to surgical resection