Neuroendocrine Carcinoma Involving Virchows Node: A Case Report

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I. INTRODUCTION

Neuroendocrine carcinoma (NEC) is a rare and aggressive malignancy that can metastasize to lymph nodes, with the left supraclavicular lymph node (Virchow's node) involvement often indicating advanced disease. NEC is a high-grade, poorly differentiated malignant neoplasm arising from neuroendocrine cells dispersed throughout the body. These tumors are most commonly found in the lungs (as small cell lung carcinoma) and in the gastrointestinal tract and pancreas (as extrapulmonary NECs). Characterized by aggressive biological behaviour, rapid proliferation, and early metastasis, NECs often present at advanced stages with systemic involvement.

One of the rare but clinically significant manifestations of disseminated malignancy is involvement of Virchow's node, also referred to as Troisier's sign. This refers to a firm, often painless, left supraclavicular lymph node enlargement, which classically signals metastatic spread from intra-abdominal or intrathoracic malignancies via the thoracic duct. The most frequent primary tumors associated with Virchow's node include gastric adenocarcinoma, pancreatic cancer, esophageal carcinoma, and lung carcinoma. However, neuroendocrine tumors (NETs), especially high-grade NECs, involving Virchow's node are exceedingly rare, and sparsely documented in the literature.

NEC in older adults presents unique diagnostic and therapeutic challenges due to atypical presentations and age-related comorbidities. This case report describes a rare presentation of NEC manifesting as a left supraclavicular lymph node mass in an elderly patient, emphasizing diagnostic challenges, treatment approaches, and prognosis.

II. CASE PRESENTATION

We report the case of a 74-year-old male patient, who was admitted in the General Surgery department with complaints of swelling on the left side of neck (for past 4 months), night sweats and generalized lymphadenopathy evolving for several months, under treatment for Hypertension, Type 2 Diabetes Mellitus and Coronary artery disease and is on Telmisartan, Insulin Human Mixtard, Rosuvastatin/Aspirin and Clopidogrel.

Clinical examination found a fixed level V lymph node of supraclavicular mass, palpable, measuring approximately (3.0x2.5x1.5cms) on left side.

Fludeoxyglucose (FDG) Whole Body High Definition PET/CT Report showed metabolically active lymphadenopathy involving the left cervical supraclavicular, mediastenal and abdominopelvic regions. It also shows FDG concentrating (SUVmax 15.13) enlarged lymph nodes noted in the left intraparotid, left level III, IV, V and supraclavicular region, the largest seen in left level III measuring (26 x 25 mm), also seen in pre-vascular left upper paratracheal, bilateral lower paratracheal subcarinal and left pulmonary region, the largest in pre-vascular measuring (21 x 18 mm) and another tiny hypodensity lesion (approx 5mm) noted in the segment II and also metabolically active lesion in the segment II of liver- metastatic.

USG Abdomen and Pelvis revealed that mild heterogeneously enhancing mass lesion (26 x 20 x 32 mm) noted in left lobe of liver – likely secondary deposit.

The laboratory findings revealed that elevations in serum LDH level (404U/L), Serum PSA (6.410ng/mL) and s

The plan for treatment was excision and biopsy. The left level V cervical lymph node biopsy under GA was done and sent to the histopathological lab. Post operative period uneventful and shifted to room. On the 3rd day, the patient was symptomatically better and discharged.

Histopathology of left cervical lymph node excision (3.0 x 2.5 x 1.5 cm) shows lymphoproliferative lesion suggestive of High-grade Non-Hodgkin Lymphoma.

On Immunohistochemistry examination of the specimen,

(NSE, CD56, Chromogranin) – were found to be positive.

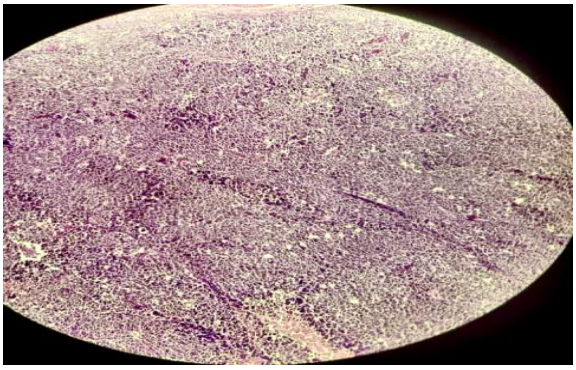

Fig 1: shows the lymph node architecture is completely effaced by a population of atypical neoplastic cells arranged in a diffuse sheet-like pattern

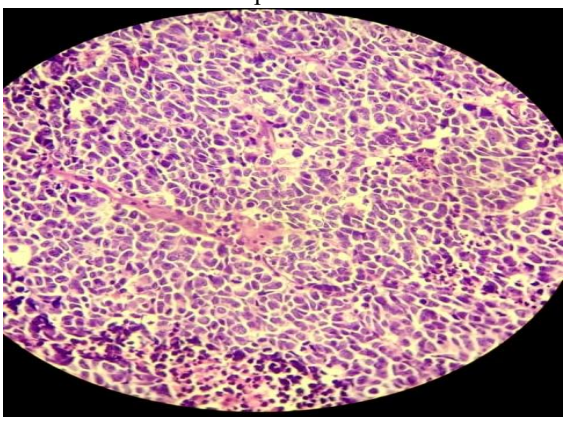

Fig 2: shows tumor cells are highly pleomorphic, exhibiting significant nuclear atypia, high NLC ratio, hyperchromatic nuclei with coarsely granular chromatin nuclear molding, scant cytoplasm, with some areas showing eosinophilic to amphophilic and frequent mitotic figures

III. DISCUSSION

Neuroendocrine carcinomas represent a rare, aggressive subset of neuroendocrine neoplasms (NENs), characterized by poor differentiation and high proliferative activity. Our case involves a 74-year-old male with generalized lymphadenopathy, night sweats, and a cervical lymph node biopsy initially interpreted as high-grade Non-Hodgkin lymphoma, a finding that underscores the diagnostic challenge when neuroendocrine carcinoma presents in the head and neck. His comorbidities—hypertension, type 2 diabetes, and coronary artery disease—requiring medications like telmisartan, insulin, rosuvastatin/aspirin, and clopidogrel, add complexity to both diagnosis and management.

NEC presenting as a cervical lymph node mass mimicking lymphoma or tuberculosis is exceedingly rare. A case of a 55-year-old man with a right neck mass misdiagnosed initially as non-Hodgkin lymphoma was later confirmed as primary NEC of a cervical lymph node following detailed histopathological and immunohistochemical evaluation. Similarly, a 64-year-old male in India presenting with generalized lymphadenopathy initially worked up for tuberculosis and lymphoma was ultimately diagnosed with disseminated neuroendocrine tumor of unknown primary. These parallel cases reflect how NEC can hide behind more common diagnostic labels in lymph node–centered presentations.NECs in the head and neck are characterized by aggressive behaviour, rapid progression, and poor prognosis.

A reported case of a 76-year-old male with a rapidly enlarging left cervical mass, likely arising from the parotid gland, was diagnosed as small cell NEC (SCNEC) of the neck, with infiltration into local structures and hepatic metastases; the patient succumbed after just two cycles of chemotherapy.

Additionally, a series of 16 head and neck NEC cases (mean age ≈66 years) highlighted primary sites such as salivary glands and paranasal sinuses. Poorly differentiated NEC comprised nearly 69%, with stage I–III disease showing markedly better survival (≈78% at 12 months) compared to stage IV (≈57%) Bilateral

Virchow Nodes as Metastasis of Pulmonary Small-cell Neuroendocrine Carcinoma

IV. CONCLUSION

Neuroendocrine carcinoma (NEC) is a rare and aggressive cancer originating from neuroendocrine cells in various organs, such as the gastrointestinal tract, pancreas, and lungs. Unlike well-differentiated neuroendocrine tumors (NETs), NEC is poorly differentiated, grows rapidly, and metastasizes early, often to the liver, bones, and lymph nodes, including Virchow's node. Diagnosis involves imaging, biopsy, and immunohistochemistry, with treatment typically involving chemotherapy and radiation. However, despite treatment, the prognosis for NEC remains poor, underscoring the need for further research to improve outcomes.

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