DISCUSSION:

ALK positive large B cell lymphoma (ALK+ LBCL) was first described by Delsol et al in 1997,[1] since then approximately 130 cases have been reported in English literature.

It is an extremely rare (less than 1%)[2] and a unique subtype of a diffuse large B cell lymphoma with plasmacytic/ immunoblastic differentiation.

The rarity of this neoplasm can partly be attributed to under-recognition of the tumor given its challenging diagnosis with mostly negative expression of routine lymphoma markers (LCA and CD20).

The disease most commonly affects young males (male: female ratio – 3.5:1) with a median age of 35 years.[3] Most cases present at an advanced stage – III/IV with frequent nodal disease or mediastinal mass. As opposed to plasmablastic lymphoma, there is no known association with immunosupression.[2]

Given the arrangement of neoplastic cells in sinusoidal pattern or cohesive clusters, presence of large nucleoated cells and mostly a nodal disease at presentation, metastatic carcinoma, germ cell tumors, melanoma, Hodgkin lymphoma and anaplastic large cell lymphoma form the most important morphological mimics.

Immunohistochemically, tumor cells strongly express plasma cell markers (CD138, VS38c, PRDM1 and XBP1) and EMA, and are mostly negative for B - cell markers (CD20, CD79a, PAX5), LCA, CD30 and T- cell markers (CD3, CD5, CD8, CD7), though few cases may show aberrant expression of T cell markers like CD57, CD4, CD43 and perforin. Also very few cases may show heterogenous expression of LCA and focal and weak expression of CD30. Staining for HHV8 and EBV is consistently negative.[2]

ALK expression is the hallmark of this neoplasm. ALK staining pattern can be classified as granular cytoplasmic staining (GCS) or a non-GCS pattern. It is also indicative of the underlying genetic abnormality.[2]

Most cases typically show GCS,[4] indicative of commonest underlying genetic abnormality i.e., t (2:17)(p23;q23) resulting in clathrin (CLTC) and ALK chimeric protein formation.[2,5]