OBJECTIVES: Nodular lymphocyte predominant Hodgkin lymphoma (NLPHL) constitutes 5-10% of all Hodgkin lymphomas. In 2003, it was sub-classified into 6 immunoarchitectural patterns with prognostic significance. We aimed to study the histomorphological features of NLPHL, classify it according to the variant immunoarchitectural patterns and analyse the frequency of each pattern in an Indian population. We have also explored the diagnostic value of two immunohistochemical markers PD1 and CD57 for their usefulness in the differentiation of NLPHL from T cell histiocyte rich large B cell lymphoma (THRLBCL).

MATERIALS AND METHODS: The lymph node biopsies of 49 cases of NLPHL and 10 cases of THRLBCL which were diagnosed between January 2003 and December 2013 were included in our study and the histomorphological features were
assessed. Based on their morphology on the H&E, CD20 and CD3 sections, 51 biopsies of NLPHL were sub-classified. PD1 and CD57 were done on 34 biopsies of NLPHL and 10 biopsies of THRLBCL and the frequency of rosettes in each biopsy was assessed. Demographics and categorical variables were summarised using descriptive analysis and the usefulness of PD1 and CD57 was assessed by calculating their sensitivity, specificity, positive and negative predictive values and positive likelihood ratio.

**RESULTS:** The most common pattern of NLPHL was Pattern A followed by Pattern D. Hybrid pattern was seen in 7 biopsies of NLPHL, of which Pattern D / E was the most common. All hybrid Pattern E cases were associated with Pattern D, hence we suggest that the nodular pattern with T cell rich background progresses to diffuse T cell rich B cell lymphoma like pattern. Transformation to diffuse large B cell lymphoma (NOS) was seen in 6.12% of cases. Pattern D was the more common pattern found to be associated with DLBCL transformation. Two of our patients had a documented relapse, one with progression from Pattern C to Pattern F and the other with progression from Pattern A to Pattern D. Frequent PD1 rosettes were seen in Pattern A (93%) followed by the Pattern D (73%). All cases of Pattern B and Pattern C had frequent PD1 rosettes. Infrequent PD1 rosettes were seen in only Pattern F. Thus the nodular patterns had a higher frequency of staining with PD1 than the diffuse variants. Overall, PD1 rosettes were seen in 81.25% of NLPHL cases. Frequent CD57 rosettes were seen in the Pattern C (100%), Pattern A (80%), Pattern D (42%) and Pattern B (33%). Patterns E and F lacked CD57 rosettes in all cases. THRLBCL showed only infrequent rosettes with both PD1 (10%) and CD57 (20%). PD1 was
found to be a more sensitive and specific marker than CD57 for the diagnosis of NLPHL.

KEYWORDS:

Nodular lymphocyte predominant Hodgkin lymphoma

T cell histiocyte rich large B cell lymphoma

Immunoarchitectural patterns

PD1

CD57