

## Post treatment transformation of non-hodgkin lymphoma to Hodgkin lymphoma-A rare case study

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### Abstract

We report a rare case of a patient who developed Hodgkin Lymphoma following the treatment of Non Hodgkin lymphoma. It is well known that the risk of Non-Hodgkin's Lymphoma is increased significantly after treatment for Hodgkin's Lymphoma. However, an increased risk of Hodgkin's Lymphoma following treatment of NHL has not been commonly noted in several large cancer registry. It is very important to study the transformation of lymphomas and their interrelationship to decrease the morbidity and mortality and fastest cure of the patients.

**Keywords:** lymphoma, hodgkin, non-hodgkin

### Introduction

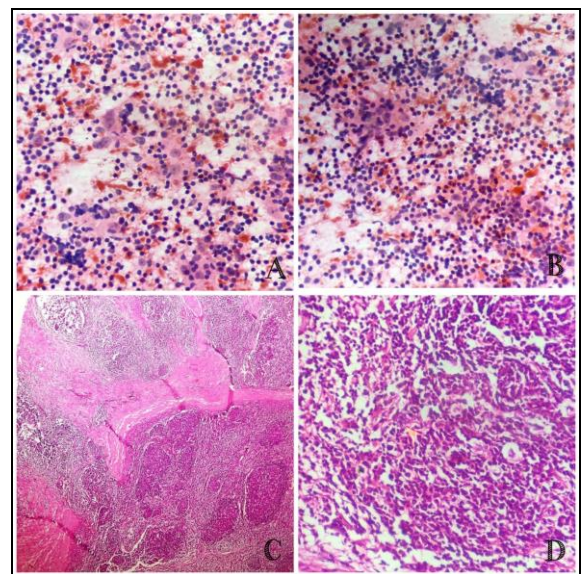
The modern classification of Hodgkin's disease was first introduced by Lukes and Butler<sup>[1]</sup>. The Revised European American Lymphoma (REAL) classification in 1994 included Hodgkin's lymphoma as one of the lymphoid neoplasms, and distinguished between 2 main types: nodular lymphocyte predominant Hodgkin's lymphoma (NLPHL) and classical Hodgkin's lymphoma (CHL). CHL was further classified into 4 subtypes: nodular sclerosis CHL (NSCHL), mixed cellularity CHL (MCCHL), lymphocyte-rich CHL (LRCHL), and lymphocyte-depleted CHL (LDCHL)<sup>[2]</sup>.

As per enormous research done in lymphoreticular malignancies, it is well known that the risk of Non-Hodgkin's Lymphoma (NHL) is increased significantly after treatment for Hodgkin's Lymphoma (HL). However, an increased risk of Hodgkin's Lymphoma following treatment of NHL has not been commonly noted in several large cancer registry<sup>[3, 4, 5, 6]</sup>. Delineation of the risk of Hodgkin's lymphoma in patients with NHL is important, not only from a clinical standpoint, but also in understanding the interrelationship between these two major types of lymphoma. The terminology recommended in the REAL classification was incorporated into the World Health Organization (WHO) classification of tumors of hematopoietic and lymphoid tissues, including the substitution of the term Hodgkin's lymphoma for Hodgkin's disease<sup>[7]</sup>.

### Case Report

We report a case of 65 year old female, complaining of a swelling in posterior triangle at right aspect since 2 months which was not painful. She was a known case of Non-Hodgkin lymphoma diagnosed 1.5 years ago and took chemotherapy for the same. She had past history of Tuberculosis for which she took treatment (AKT) for 6 months. There was a history of weight loss and mild fever. On clinical examination, single lymph node swelling was noted in posterior triangle measuring 3x3.5 cm and it was oval, firm, fixed, non-tender. Skin over the swelling was unremarkable. On ultrasonography, multiple right cervical

lymph nodes were noted. After detailed clinical examination, FNAC of the swelling was done. Smears were fixed in isopropyl alcohol and stained with H and E stain and Papanicolaou stain. FNAC smears revealed moderate cellularity showing polymorphous population comprising of lymphocytes, plasma cells, histiocytes and many Reed Sternberg cells with typical owl eye nuclei and macronucleoli. Many uninucleated and multinucleated cells with abundant cytoplasm were also noted against hemorrhagic background as shown in figure 1A &1B. A probable diagnosis of Hodgkin lymphoma was given on FNAC and biopsy was advised. After receiving the biopsy of the same patient, it was processed and slides were studied. Again on histopathology, diagnosis of Hodgkin lymphoma was done with a subtype of Nodular sclerosis as shown in figure 1C &1D.



**Fig 1:** Cytomorphological and histopathological features of Hodgkin lymphoma

A: Smear showing Reed Sternberg cells with polymorphous population in the background (100X, H and E)

- B: Smear showing epithelioid cell granuloma (100X, H and E)  
 C: Showing multiple nodules separated by sclerotic septae (100X, H and E)  
 D: Showing Lacunar cells in nodular sclerosis (200X, H and E)

### Discussion

Occurrence of Hodgkin lymphoma after treatment of Non Hodgkin lymphoma is very rare and it has been noted occasionally in the literature [8-11]. The development of non-Hodgkin's lymphoma (NHL) in patients with Hodgkin's disease (HD) is a well-recognized though infrequent event [12-16] and may occur subsequent to or coexisting with the diagnosis of HD when the term composite lymphoma has been used [17-18]. In our case, patient also had tuberculosis when she was having NHL and it is very rare presentation. In the literature, it is given that among the patients diagnosed with HL after treatment of NHL, the commonest type of HL was noted as Nodular Sclerosis which was also noted by Travis L B *et al* and Carrato A *et al* as the commonest subtype [6, 11].

### Conclusion

Hodgkin lymphoma following treatment of Non Hodgkin lymphoma is very rare. It is very essential to study the transformation of lymphomas and their interrelationship to decrease the morbidity and mortality and fastest cure of such patients.

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