

## Synchronous RCC with NHL: A case report

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### Abstract

A 55year old man presented with cervical adenopathy of two months duration. Biopsy of the node showed T-cell lymphoma, which was confirmed by immunohistochemistry. An abdominal CT done for the staging work-up of the lymphoma, revealed a left renal mass which histologically proved to be renal cell carcinoma [RCC], grade II, stage I. An association between RCC and lymphoma is rare and this case is documented for the synchronous and concurrent occurrence of non-Hodgkin's lymphoma [NHL] of T-cell type and RCC.

**Key words:** RCC, Synchronous, NHL

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Second primary malignancies have been known to occur in patients with both solid tumours and haematologic malignancies. Among the second malignant neoplasms that occur with a higher incidence in cancer patients are lymphoma and RCC as well as melanoma, lung/bronchus carcinoma<sup>1</sup>. Previous epidemiological studies showed an increased risk for the development of RCC after adjuvant therapy or simultaneous discovery of NHL. However clinicopathological features of NHL complicated by RCC are not well known. An association between RCC and lymphoid malignancy has rarely been described, barely so with T-cell NHL. In one series RCC grade II or III was simultaneously detected in four patients having NHL, of which diffuse large B-cell type was the most common. RCC with T-cell lymphoma is an unusual occurrence<sup>2</sup>.

### Case report

A 50year man presented with complaints of left cervical adenopathy of 2 months duration; there was no complaint of cough or fever.

FNAC of the node yielded adequate material and showed a pleomorphic population of abnormal lymphoid cells and suspicious poorly formed granulomas and an excision biopsy was advised.

### Pathological findings

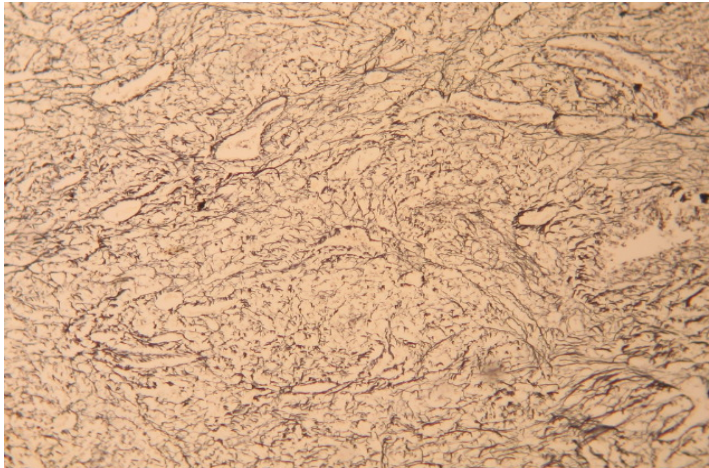
The excised node was well encapsulated, grey-white and homogenous on cut surface. The histology showed effacement of the nodal architecture by moderately pleomorphic lymphoid cells, with clear

clefted nuclei, central eosinophilic nucleoli and scanty cytoplasm; mitoses were numerous and proliferation of post-capillary venules was prominent with reticulin stain (Fig:1). The T-cell phenotype was confirmed by immunoreactivity for CD3 & CD4. Within two weeks of the diagnosis of the T-cell lymphoma, the patient was subjected for staging CT of the abdomen, which revealed a mass in the mid & lower portion of the left kidney (Fig. 2). The patient did not complain of any urinary disturbance or haematuria. He underwent radical nephrectomy, which showed stage I, nuclear grade II RCC, with only capsular infiltration (Fig.3). The hilar vessels, ureter and the distal resected margin of the ureter were free of tumour involvement.

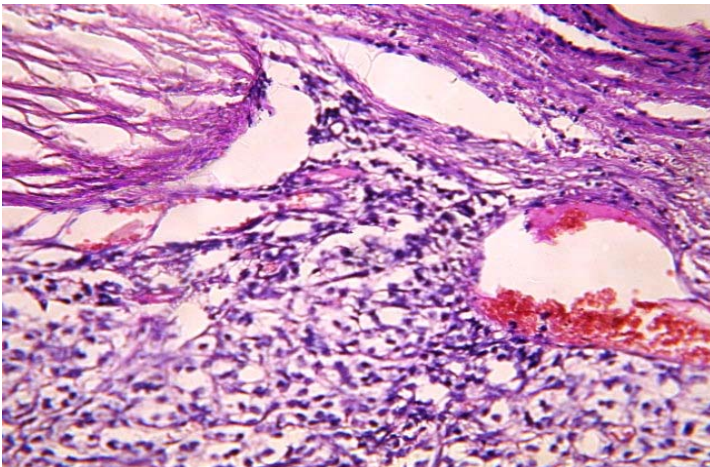
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**Fig 1:** Prominence of high endothelial venules (Reticulin stain100x)



**Fig 2:** Specimen of the kidney involved by RCC



**Fig 3:** Photomicrograph of RCC -nuclear grade 2, showing capsular invasion.(H&E,400X)

## Discussion

There have been conflicting reports in the literature regarding the association of other malignancies with RCC. Christopher G. Wood found 34.8% of the other malignancies (prostate, bladder, lung, breast and colon) were antecedent, 18.7% were synchronous and 46.7% were subsequent to the diagnosis to RCC. The observed subsequent development of a second malignancy was significantly higher (22%), than was expected based on population incidences, especially for the development of the bladder cancer, NHL, and melanoma.<sup>3</sup>

The incidence of RCC and lymphoid malignancy occurring in the same patient is higher than in the general population.<sup>4</sup> Concurrent occurrence of these neoplasms, including RCC, NHL and leiomyoma in the same kidney has been documented.<sup>5</sup> Hodgkin's lymphoma<sup>6</sup>, diffuse large B or T cell lymphoma<sup>2</sup> and centrocytic lymphoma can coexist with RCC. Synchronous chromophobe RCC and centrocytic lymphoma has also been reported.<sup>7</sup>

There is a male preponderance for patients with RCC and malignant lymphoma, which is greater than the male preponderance for either RCC or NHL alone [2.2 vs 2.0 vs 1.2]. The 15 year cumulative risk for the development of a secondary malignancy was 26.6% for men and 15.5% for women ( $p=0.4$ ). And there is an increased likelihood of the lymphoma being extranodal.<sup>8</sup> The first case of RCC collision with intravascular lymphomatosis was a 77 year old white woman with diffuse large B cell lymphoma of the subcutaneous tissue of breast.<sup>9</sup> Diffuse large B cell NHL of the paranasal sinuses was diagnosed in another patient and just before he was scheduled to start treatment, a left RCC was detected<sup>10</sup>. In the present case, a similar sequence of events was seen. The association of RCC & T cell NHL, in the present case cannot be explained by the potential etiologic factor of prior treatment for malignancy, as the RCC was detected during the staging work-up, before starting treatment. It is possible that the malignancies share some common background factors such as genetic mutations, genetic predisposition, immunological abnormality, environmental factors, including a search for viral sequences, and possible immune dysregulation, generating the lymphoma and subsequently leading to solid tumours such as RCC or melanoma.<sup>8</sup>

The association of NHL and RCC is very rare and definitely poses a problem for clinical staging, prognostication and treatment. Then due to the fact that it is not usual, and that a local stage RCC presents with neck adenopathies, when they appear, possible co-existence of RCC with lymphoma should be suspected.<sup>7</sup> It remains to be further investigated whether T cell lymphoma and RCC share some

common predisposing factors or, whether an immunomodulatory role of the first malignancy has predisposed to the second. The patient in the present study has received chemotherapy for the T cell lymphoma and the follow-up has been uneventful for the past 8 months.

Interestingly in the study of Christopher G. Wood, wherein 1425 patients with RCC over a 6 year period were evaluated for the presence of an antecedent, synchronous or subsequent malignancy, it was found that patients who presented with an antecedent or synchronous malignancy demonstrated a worse survival<sup>3</sup>.

Overall, recently published studies appear to provide further support for the kidney, liver and lymphatic system as target for environmental factors, especially Trichloroethylene (TCE) toxicity, suggesting, as do previous studies, modestly elevated (typically 1.5-2.0) site-specific relative risk, given exposure conditions in these studies. However a number of challenging issues need to be considered before drawing causal conclusion about TCE exposure.<sup>11</sup> Coexistence of RCC and NHL as in the present study, is a causal relationship or a co-incidental occurrence needs to be established.

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