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LYMPHNODE INFARCTION-THE DYING LYMPH NODES

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ABSTRACT

Lymph node infarction is rare, owing to the abundant vascularity of the organ. The causes of lymphnode infarction include various non neoplastic and neoplastic conditions, the most common being Non-Hodgkin's lymphoma. The aim of this study was to identify the clinical scenarios associated with lymph node infarction. A total of 11 cases were reviewed. The cervical lymph nodes were the most commonly involved ones. There were 6 cases of Non-Hodgkin lymphoma (NHL) associated with lymph node infarction. One case each of metastatic malignant melanoma and papillary carcinoma of the thyroid. Other associations are also discussed. The etiology of lymph node infarction may be almost impossible to determine on histopathological examination. Thorough examination for a possible etiology must however be undertaken to rule out underlying lymphoma or metastasis

Key words: Infarction, lymph node

INTRODUCTION

Lymph node infarction is rare, owing to the abundant vascularity of the organ. Various non neoplastic and neoplastic conditions can cause lymph node infarction. [1,2]The most common cause of spontaneous lymph node infarction is Non-Hodgkin's lymphoma (NHL) which is frequently shadowed by infarction. The incidence of malignant lymphoma in patients with lymph node infarction varies from as high as 89% to as low as 32% in published series.[1,3,4] Few authors estimate that one case of lymph node infarction may be encountered in every 13 000 routine surgical specimens. Other neoplastic conditions include metastatic melanoma. [1,2,5]

Some of the non-neoplastic conditions associated with infarction include necrotizing lymphadenitis (Kikuchi's lymphadenitis), mucocutaneous lymph node syndrome, necrotizing granulomatous inflammation, viral infections (Parvovirus B19, Infectious mononucleosis), polyarteritis nodosa, cholesterol atheromatous embolism, thrombosis, intestinal volvulus, gold injections and mononeuritis multiplex. [6,7]Other reported causes include those associated with dengue fever and following mediastinoscopy and fine needle aspiration cytology and a few following heart and lung transplantation[5,8]

OBJECTIVE

To try and identify scenarios associated with lymph node infarction

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MATERIALS AND METHODS

A retrospective study was conducted to retrieve all cases of lymph nodes with a diagnosis of lymph node infarction or lymph node necrosis, between January 2007 and May 2016. The clinical features were noted for each case. Slides were retrieved; the histopathology and immunohistochemical findings were also assessed.

RESULTS

There were a total of 11` cases that were retrieved. The age group in the present study ranged from 19-68years. There were 7 male and 4 female patients. The cervical lymph node was the most commonly involved accounting for 63.6% (7 cases) followed by inguinal lymph node (2 cases; 16.7%), jugular lymph node(1 case; 8.3%) and axillary lymph node (1 case; 8.3%)[Table 1]

There were 6 cases of Non-Hodgkin lymphoma associated with lymph node infarction. 3 cases were subsequently diagnosed with diffuse large cell lymphoma and 1 case as follicular lymphoma. In 2 other cases further subtyping was not possible.

One case of metastatic melanoma was associated with infarction. In 3 cases the etiology was undetermined but in one of these cases autoimmune workup was suggested. A case of papillary thyroid carcinoma presented with lymphadenopathy and on histopathological examination a foreign body granulomatous response was identified, associated with lymph node infarction. The majority of the lymph nodes with infarction were located in the head and neck region.

Table 1: Causes of lymph node infarction along with clinical features

Sl no	Age/Sex	Site	Cause of lymph node infarction in each case
1	60/M	Inguinal lymph node	Metastatic malignant melanoma
2	68/M	Cervical lymph node	Non Hodgkin's lymphoma
3	64/M	Jugular lymph node	Follicular lymphoma
4	53/F	Cervical lymph node	Lymph node infarction (Retroviral illness)
5	61/M	Axillary lymph node	Diffuse large B cell lymphoma
6	49/F	Cervical lymph node	Foreign body granulomatous response with infarction (K/C/O papillary carcinoma thyroid)
7	48/F	Cervical lymph node	Diffuse large B cell lymphoma
8	61/F	Cervical lymph node	Undetermined
9	38/M	Cervical lymph node	Non Hodgkin's lymphoma
10	19/F	Cervical lymph node	Undetermined
11	30/M	Inguinal lymph node	Undetermined (Autoimmune workup suggested)
12	53/M	Cervical lymph node	Diffuse large B cell lymphoma

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DISCUSSION

In a vast majority of cases lymph node infarction may be associated with prior, concurrent or subsequent diagnosis of malignancy. Lymphomas can initially present with pain and swelling due to infarction. This may in turn clinically mimic an acute inflammatory process. Strauchen & Miller described 5 cases of lymph node infarction associated with diffuse large B cell lymphoma.[1] They also state that the lymphoid antigens are frequently preserved in cases of lymph node infarction, and immunohistochemical study of infarcted lymph nodes may provide clinically useful information. Re-emphasizing the fact, Ghartimagar D et al.[2] in their case report describe a case of lymphoma associated with infarction who initially presented with a submandibular abscess. [5]

Initial literature reports of spontaneous lymph node infarction suggest vasculitis, vascular thrombosis or mechanical vascular obstruction as possible etiologies. Lymph node infarction can rarely be associated with disseminated intravascular coagulation (DIC) in cases of dengue fever as described by Rao et al.[4] Chemotherapy or previous fine needle aspiration can precipitate infarction in some cases. An underlying subacute or chronic vascular compromise produced by vascular thrombosis can also induced lymph node infarction. [5,6] It has also been described subsequent to trauma and as a consequence of intramuscular gold administered in a patient with rheumatoid arthritis.[6,8]

A completely infarcted lymph node should alert the pathologist to the possibility of underlying lymphoma, as it is the most common cause of spontaneous lymph node infarction. Multiple serial and deeper sections of the infarcted lymph node should be taken in order to examine the subcapsular tissue for any clue of malignancy. Further comprehensive morphologic evaluation of adjoining viable node should also be performed. The concept of immunohistochemistry on the infarcted lymph node is debatable. Few authors believe that infarcted tissue is not suitable for immunohistochemical staining and may not be useful in establishing the underlying pathology. However some studies have documented that the lymphoid antigens are frequently preserved in cases of lymph node infarction and immunohistochemistry may therefore provide clinically useful information. .[1,6,8] Further studies with a larger number of cases is required to establish the concept of immunohistochemistry, owing to the less number of cases in the present study and various other studies. However assessment of morphological features including cell size necessary for lymphoma subclassification can be challenging.

CONCLUSION

Spontaneous nodal infarction is rare. The etiology of lymph node infarction may be difficult or impossible to determine on histopathological examination. Thorough examination for a possible etiology must however be undertaken to rule out underlying lymphoma or metastasis.

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