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Visceral and Incorporated-Smooth muscle-Lymph Node

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Occurrence of smooth muscle may be encountered within lymph node capsule and hilum of normal lymph nodes. The frequently observed condition appears as an incidental feature within lymph nodes wherein hilar region demonstrates proliferation of smooth muscle cells. Smooth muscle proliferation is frequently encountered within superficial, inguinal and axillary lymph nodes.

The condition is posited to arise on account of enhanced retrograde pressure within efferent lymphatics. Alternatively, localized inflammation may demonstrate the lesion. Smooth muscle proliferation within lymph nodes delineates a male preponderance, in contrast to female population(1,2).

Preponderantly asymptomatic, the disorder is devoid of specific clinical significance. However, smooth muscle proliferation within lymph node parenchyma is associated with enlarged lymph nodes(2,3).

Grossly, enlarged lymph nodes appear to demonstrate a smooth extraneous surface. Cut surface appears firm and demonstrates a tan hue(3,4).

Upon microscopy, smooth muscle aggregates confined within lymph node parenchyma are associated with lymph nodes delineating preserved architecture. Smooth muscle fibres configure parallel to lymph node capsule or hilar vascular articulations(3,4).

Hilar alterations may demonstrate ~smooth muscle fibres appear intensely interwoven within constituent fibrous tissue and may adhere to lymph node capsule of hilar region. ~smooth muscle fibres may configure an interlacing network with multi-directional expansion within adipose tissue of lymph node hilum. ~smooth muscle may circumscribe individual islands of adipose tissue cells(4,5).

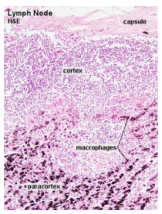

Figure 1: Smooth muscle proliferation confined to lymph node parenchyma demonstrating bundles of smooth muscle configured parallel to hilar region and interwoven with fibrous tissue(12).

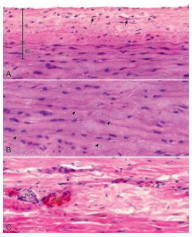

Figure 2: Smooth muscle proliferation within lymph nodes delineating parallel bundles of smooth muscle adjacent to hilar region and interlacing fibrous tissue(13).

Table 1: Classification of T cell large granular lymphocytic leukaemia as per World Health Organization classification (2016)(6)

Mature T cell/NK cell neoplasms
T cell granular lymphocytic leukaemia
Aggressive NK cell leukaemia
Chronic lymphoproliferative disorder of NK cells

Occurrence of STAT3 and STAT5b mutations may occur in a subset of leukaemia and appear associated with clinically aggressive disease

Table 2: Disorders associated with large granular lymphocytic leukaemia (6).

Neoplasms
Autoimmune cytopenias
Pure red cell aplasia
Autoimmune haemolytic anaemia
Idiopathic thrombocytopenic purpura
Evans syndrome
B cell lymphoid neoplasms
Low grade non Hodgkin's lymphoma
Diffuse large B cell lymphoma
Mantle cell lymphoma
Multiple myeloma
Chronic lymphocytic leukaemia

Hairy cell leukaemia
Waldenström macroglobulinaemia
Hodgkin's lymphoma
Lymphomatoid granulomatosis
Heavy chain disease
Autoimmune diseases/connective tissue disorders
Rheumatoid arthritis
Systemic lupus erythematosus
Vasculitis
Systemic sclerosis
Endocrinopathy
APECED(polyendocrinopathy candidosis-ectodermal dystrophy)
Multiple endocrine neoplasia-1
Hashimoto's disease
Graves' disease
Chronic inflammatory bowel disease
Coeliac disease
Gougerot-Sjögren syndrome
Glomerulonephritis
Polymyositis
Inclusion body myositis
Poly/multinevritis
Rhizomelic pseudo-polyarthritis
Inflammatory arthritis(unclassified)
Lambert-Eaton myasthenic syndrome
Good syndrome
Behcet's disease
Multiple sclerosis
Acquired factor VIII inhibitor
Myelodysplastic syndrome
Acute myeloid leukaemia
Haemophagocytic syndrome
Pulmonary hypertension
Post-organ or haematopoietic stem cell transplantation
Post viral infection

Smooth muscle cells confined to lymph node parenchyma appear immune reactive to smooth muscle actin, desmin or muscle specific actin(7,8).

Cells impregnated within nodal parenchyma appear immune non reactive to CD34(8,9).

Aggregates of smooth muscle fibres confined to lymph node parenchyma require segregation from lesions as angiomyomatous hamartoma, benign metastasizing leiomyoma, inflammatory myofibroblastic tumor, intranodal leiomyoma, palisading myofibroblastoma, lymphangioleiomyomatosis or vascular transformation of lymph node sinuses(9,10).

Smooth muscle confined to lymph node parenchyma may be appropriately discerned by surgical tissue sampling of involved lymph node. Additionally, cogent immunohistochemistry may be adopted for detecting constituent smooth muscle(10,11).

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12. Image 1 Courtesy: Embryology.com
13. Image 2 Courtesy: Science direct