

Ebony and Obsidian-Anthracosis Lymph Node

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Anthracosis emerges as a process associated with accumulation of carbon within lymph nodes. Frequently, intrapulmonary lymph nodes are permeated with coal dust or smoke. Besides, environmental pollution may contribute significantly to occurrence of anthracosis.

Anthracosis of the lymph node is commonly encountered wherein hilar and bronchial lymph nodes are frequently implicated.

Clinically, enlargement of lymph nodes is observed. Mediastinal lymphadenopathy is common and significant. Hyalinization of lymph nodes may occur [1,2].

Lesions may simulate a neoplasm and demonstrate a 'storiform' architectural pattern configured by disseminated histiocytes. Anthracosis may concur with silica particles. However, a distinct history of industrial exposure appears absent [2,3].

Cytological examination demonstrates smears delineating cellular aggregates of variable magnitude and a population of singularly dispersed macrophages permeated with anthracotic pigment. Varying proportion of foreign body subtype of multinucleated giant cells may be observed. Foci of necrosis or a segment of atypical cells appears absent [4,5].

Grossly, enlarged, firm lymph nodes are enunciated. Cut surface displays a dark brown to black hue [5,6].

Diffuse large B cell lymphoma (DLBCL) not otherwise specified (NOS) ~Germinal centre B cell type ~Activated B cell type
T cell/ histiocyte rich large B cell lymphoma
Primary DLBCL of central nervous system
Epstein Barr virus (EBV+) DLBCL NOS
EBV+ mucocutaneous ulcer
DLBCL associated with chronic inflammation
Lymphomatoid granulomatosis
Primary mediastinal/thymic large B cell lymphoma
Intravascular large B cell lymphoma
ALK+ large B cell lymphoma
Plasmablastic lymphoma
Primary effusion lymphoma

Human herpes virus 8 (HHV8+) DLBCL NOS
Burkitt lymphoma
Burkitt-like lymphoma with 11 q aberration
High grade B cell lymphoma with MYC and BCL2 and/or BCL6 rearrangements
High grade B cell lymphoma NOS
B cell lymphoma unclassifiable with features intermediate between DLBCL and classic Hodgkin's lymphoma

Table: World Health Organization classification of mature large B cell lymphoid neoplasms (2017) [7].

Upon microscopy, macrophages impregnated with fine, particulate anthracotic pigment appear in clusters and as a singularly disseminated population [8,9].

Spindle shaped cells configure a ‘storiform’ pattern. Alternatively, aggregates of macrophages may articulate ‘granuloma-like’ arrangement. Besides, hyaline scars and polarizable material indicative of silica particles may be confined to lymph node parenchyma [9,10].

Macrophages impregnated with carbon pigment may be suitably detected by immune reactivity to CD68 [11,12].

Clinical segregation of lymph nodes with anthracosis is necessitated from disorders as lymphoma, malignant neoplasms or nodal metastasis from distant primaries. Tumefaction as follicular dendritic cell tumour, Kaposi’s sarcoma, malignant fibrous histiocytoma, sarcoidosis, malignant melanoma with spindle shaped cells or tubercular lymphadenitis necessitate demarcation [11,12].

Upon plain radiography, lymph nodes appear enlarged. Mediastinal and bronchial lymph nodes are particularly implicated [11,12].

Contrast enhanced computerized tomography (CT) of the chest may demonstrate distinctive, enlarged mediastinal lymph nodes [13,14].

Aforesaid mediastinal adenopathy requires segregation from lesions of systemic inflammatory conditions as sarcoidosis, infections as endobronchial tuberculosis, infective endemic mycosis or malignant conditions as lymphoma and bronchogenic carcinoma [13,14].

Significantly enlarged lymph nodes may be appropriately subjected to surgical excision with cogent tissue sampling [15,16].

Anthracosis emerges as a benign process wherein significant clinical implications appear absent [15,16].

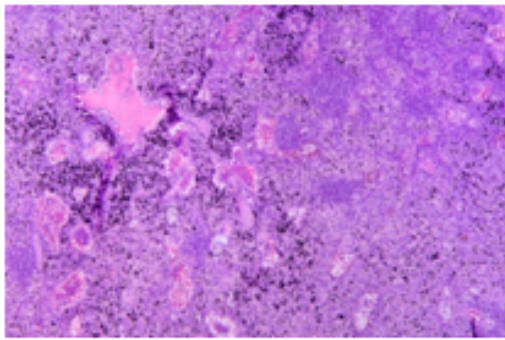


Figure 1: Anthracosis of lymph node depicting aggregates and single cell population of macrophages imbued with brown to black pigment sprinkled across the parenchyma [17].

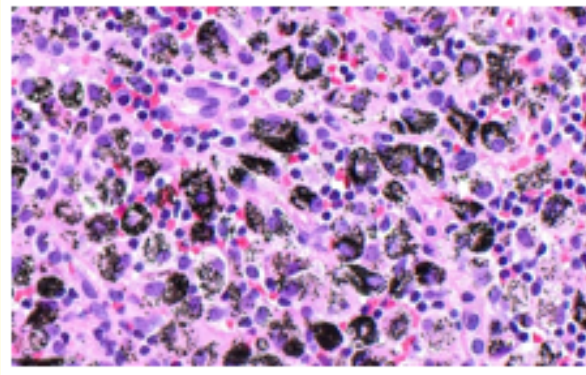


Figure 2: Anthracosis of lymph node expounding aggregates and singly dispersed macrophages pervaded with brown to black pigment [18].

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17. Image 1 Courtesy: Wikimedia commons.
18. Image 2 Courtesy: Science photo library.

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