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Editorial

Conveyance and Hauling-Lymphogranuloma Venereum

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Lymphogranuloma venereum emerges as a sexually transmitted disease engendered by infection with *Chlamydia trachomatis*. Endemic within tropical areas, the condition is commonly encountered within male homosexuals, cocaine abusers or subjects with human immunodeficiency virus (HIV) infection.

Chlamydia trachomatis emerges as a non motile, gram negative, intracellular bacterium which is transmitted via anal, oral or vaginal mucosa or cutaneous surfaces. The obligate pathogen propagates intracellularly through binary fission. Alternatively, organism may alter superficial epithelial cells of oral cavity, urogenital system or gastrointestinal tract, preponderantly the rectum. Commonly serotypes L1, L2 and L3 induce the disease.

Bacterial aggregates articulate perinuclear micro-colonies which proliferate and induce cell lysis. Thereafter, bacteria disseminate through lymphatics with consequent occurrence of lymphangitis. Lymphogranuloma venereum infection is associated with three distinct clinical stages [1,2].

Clinical course is contingent to site of bacterial inoculation. *Chlamydia trachomatis* traverses lymphatic channels from initial site of inoculation, penetrates and propagates within mononuclear phagocytes entrapped within lymph nodes, thereby engendering an intense lymphoproliferative reaction. Bacterial infectivity is mediated through organism adherence into epithelial cells through a heparin sulfate-like ligand [1,2].

Infected lymph nodes display a severe inflammatory reaction with subsequent progression into lymphangitis and emergence of painful, ulcerated buboes, occurrence of fistulas, abscesses or strictures. Lesions may extend into surrounding areas as the rectum with configuration of fistulas, perirectal abscess, proctitis, fibrosis or anal strictures [2,3].

Lymphogranuloma venereum may induce several diseases of genitourinary tract, female reproductive organs as salpingitis, gastrointestinal tract as proctocolitis, joints and pulmonary parenchyma [2,3].

Clinical features consistent with lymphogranuloma venereum infection as proctocolitis, genital ulcer or lymphadenopathy may be observed [2,3].

Upon microscopy, preliminary lesions depict tiny, necrotic foci impregnated with neutrophils.

Delayed lesions expound stellate abscesses circumscribed by pale, epithelioid cells. Inflammatory abscesses may merge with consequent articulation of sinus tracts.

Inherent vacuoles of macrophages appear impregnated with organisms. Frequently, morphological features are nonspecific and distinction of lymphogranuloma venereum from various inflammatory or infectious aetiologies may be challenging [3,5].

Characteristically, regional lymph nodes display non specific histology. However, enlarged, intracytoplasmic, basophilic inclusion bodies designated as 'Gamna-Favre' bodies may permeate afflicted endothelial cells. The pathognomonic inclusion bodies are configured of degenerated nuclear material [3,5].

Rectal biopsy enunciates features as inflammation, cryptitis or crypt abscesses. Cryptitis, crypt abscess, quantifiably enhanced inflammatory cells confined to lamina propria, granuloma formation or transmural inflammation is discernible.

Uncommonly, distortion of rectal crypt architecture may be discerned. Aforesaid features may simulate histopathological features of inflammatory bowel disease. Ultrastructural examination depicts distinctive elementary and reticulate bodies [3,5].

Ann Arbor staging of Non Hodgkin's Lymphoma [4]:

- Stage I with involvement of singular lymph node region.
- Stage IE with involvement of singular extra-lymphatic organ or site.
- Stage II with involvement of ≥2 lymph node regions on one side of diaphragm.
- Stage IIE with localized involvement of an extra-lymphatic organ or site and ≥ one lymph node region upon one side of diaphragm.
- Stage III with involvement of lymph node regions on opposite sides of diaphragm.
- Stage IIIS with involvement of spleen.
- Stage IIIE with involvement of extra-lymphatic site.
- Stage IV with diffuse or disseminated involvement of ≥one extra-lymphatic organ or tissue along with or devoid of associated lymph node involvement.

Occurrence of systemic symptoms within preceding six months are designated as fever, night sweats or >10% loss of body weight. Absence of systemic symptoms is designated 'A' whereas presence of systemic symptoms is denominated as 'B' within Ann Arbor staging of non-Hodgkin's lymphoma.

Incriminated extra-nodal sites are designated as:

- M+ with involvement of bone marrow.
- L+ with involvement of pulmonary parenchyma.
- H+ with involvement of hepatic parenchyma.
- P+ with involvement of pleura.
- O+ with involvement of bone.
- D+ with involvement of cutaneous and subcutaneous tissue.

Lymphogranuloma venereum necessitates segregation from conditions such as primary lymphogranuloma venereum, secondary lymphogranuloma venereum, tertiary lymphogranuloma venereum, malignant neoplasms as lymphoma or rectal carcinoma, cat-scratch disease, chancroid, granuloma inguinale, infection with Herpes virus, inflammatory bowel disease, syphilis, rectal fistula or stricture, inflammatory bowel disease as Crohn's disease, ischemic colitis or ulcerative colitis, megacolon due to *Clostridium difficile* infection,

infective proctitis and radiation therapy for diverse malignancies. Besides, conditions as atypical mycobacteriosis or tularemia require demarcation [5,6].

Exclusion of diverse viral aetiologies as infection with herpes simplex virus, cytomegalovirus or infectious agents of sexually transmitted diseases is necessitated [5,6].

Nucleic acid amplification assay for lymphogranuloma venereum is frequently required for appropriate disease categorization [5,6].

Polymerase chain reaction (PCR) appears appropriate for detecting the organism. Delayed hypersensitivity skin test using 'lygranum' chlamydial antigen or 'Frei's test emerges as a previously employed diagnostic manoeuver [5,6].

Lymphogranuloma venereum infection is preponderantly eradicated by antibiotics wherein agents as doxycycline may be administered for a period of three weeks with proportionate cure of > 98.5%.

In contrast to diverse chlamydial infections, lymphogranuloma venereum requires an extended duration of antibiotic therapy. Besides, resistant or intractable infections necessitate prolonged therapy [6,7].

Alternatively, agents such as erythromycin or azithromycin may be beneficial. Current or recent sexual partners of subjects with possible lymphogranuloma venereum necessitate screening for circumvention of reinfection and disease dissemination.

Ultimately, prevention and adoption of appropriate contraception are mandated during encounters with subjects at risk.

Subjects with symptoms consistent with lymphogranuloma venereum proctocolitis may be managed with doxycycline and ceftriaxone. Abstinence is recommended during the course of antibiotics and resolution of clinical symptoms [6,7].

Presumptive therapy for lymphogranuloma venereum at-risk subjects with symptoms of proctocolitis, severe inguinal lymphadenopathy with configured bubo or current or recent genital ulcers is recommended. Diagnosed lymphogranuloma venereum necessitates repetitive evaluation for *Chlamydia* approximately three months following cessation of therapy. Assessment of various sexually transmitted infections as gonorrhea, syphilis, hepatitis B, hepatitis C and especially human immunodeficiency virus (HIV) infection is warranted.

Sexual partners, contacts of subjects and individuals with possible lymphogranuloma venereum necessitate assessment for infection with chlamydial organisms [6,7].

Asymptomatic subjects and partners of individuals with lymphogranuloma venereum require presumptive doxycycline treatment regimen. Alternatively, azithromycin may be employed. Individuals with lymphogranuloma venereum and human immunodeficiency virus (HIV) infection require antibiotic therapy identical to *Chlamydia trachomatis* infection. However, prolonged therapy may be mandated [6,7].

Surgical intervention may be required to manage complications as draining abscess, fluctuant buboes, treating fistulas or sinus tracts. Residual fibrotic lesions and zones of tissue destruction may necessitate formal surgical repair with reconstruction of genitourinary tract. Rectal strictures are managed with dilatation [6,7].

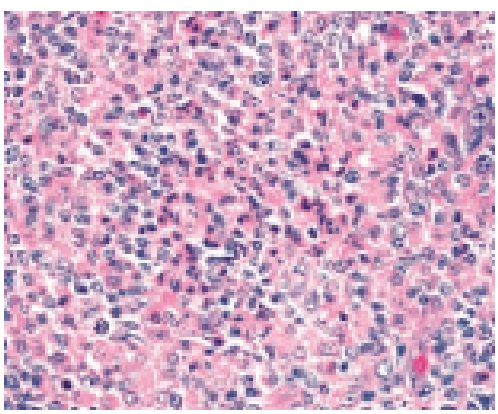

Figure 1: *Lymphogranuloma venereum lymphadenitis delineating abscess imbued with neutrophils, necrotic debris, inflammatory cells as lymphocytes, macrophages and degenerated cells and few giant cells [8].*

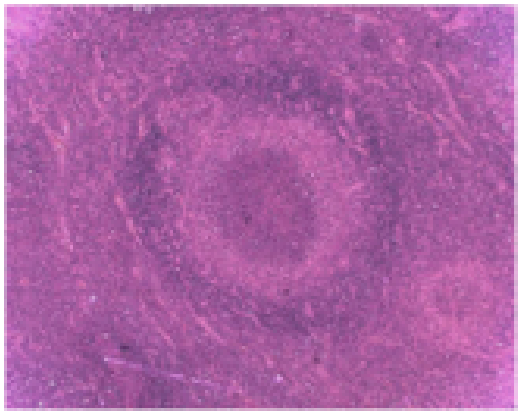

Figure 2: *Lymphogranuloma venereum lymphadenitis expounding a centric abscess impregnated with neutrophils, surrounding zone of pale histiocytes, commingled with lymphocytes, macrophages and degenerated cells with tiny necrotic foci [9].*

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8. Image 1 Courtesy: Pathology outlines.

9. Image 2 Courtesy: BMC infectious disease.

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