Infectious Mystery: Rare Streptococcal Necrotizing Lymphadenitis of the Inguinal Region

Ruchi Devbhandari MD, Sabin Tripathee MD, Manish Shah MD, Shivani Modi MD, Katherine Quiza MD, Antonette Climaco MD
Jefferson Einstein Montgomery Hospital, East Norriton, PA, 19403

INTRODUCTION

Necrotizing lymphadenitis is a rare condition caused by Epstein-Barr virus (EBV), herpes simplex virus, systemic lupus erythematosus (SLE) or Kikuchi-Fujimoto disease, usually linked to chronic inflammation. It rarely complicates bacterial lymphadenitis. It is predominantly seen in females under 40. Patients typically present with fever, cervical lymphadenopathy, fatigue, and anorexia. Diagnosis is based on lymph node biopsy. We present a rare case of bacterial necrotizing lymphadenitis caused by group A beta-hemolytic streptococcus (GABHS).

CASE PRESENTATION

A 45-year-old male without significant past medical history presented to the emergency department with a 4-day history of high-grade fever, fatigue, and myalgia.

Physical examination revealed bilateral, non-tender inguinal lymphadenopathy. Labs showed neutrophil-predominant leukocytosis. A chest X-ray was unremarkable. A computed tomography (CT) scan of abdomen/pelvis with contrast revealed diffuse lymphadenopathy and mild splenomegaly. An extensive workup including Monospot, ANA, HIV, hepatitis serology, extended viral panel and a QuantiFERON test, returned negative. Blood cultures on day 2 identified GABHS, prompting the initiation of ceftriaxone.

On day 4, due to persistent fever, a core biopsy of the left inguinal lymph node was done which revealed acute inflammation, necrosis, and gram-positive cocci in chains, with no evidence of neoplastic processes. Flow cytometry was negative for lymphoma. Tissue culture confirmed presence of GABHS. He was discharged with cephalexin.

Three days later, he returned with recurrent high-grade fever. A repeat CT scan suggested deep pelvic abscesses. Repeat blood cultures were negative. He was restarted on ceftriaxone. Linezolid was added for its anti-toxin effect. Following clinical improvement, he was discharged on additional three-week course of linezolid and cephalexin.

DISCUSSION

NL is a rare condition primarily caused by chronic inflammation or infection, and less commonly by acute bacterial infection. It is commonly seen in females with involvement of cervical and mediastinal lymph nodes. This case is the first reported instance of acute bacterial NL with inguinal lymphadenopathy in a male without any history of autoimmune disease.

A comprehensive workup is essential to exclude other causes of generalized lymphadenopathy. Infectious and autoimmune etiologies should be ruled out. Blood cultures should be collected and can be crucial for guiding diagnosis and treatment. A lymph node biopsy is the gold standard for diagnosis, which also helps in ruling out lymphoma.

Treatment focuses on addressing the underlying cause. While bacterial lymphadenitis is typically treated with a 7-10 day course of antibiotics, the duration for NL may vary. Given limited data, the optimal duration of treatment remains uncertain. Prolonged courses up to 1-3 months have been reported. Our patient responded well to a one-month course of antibiotics.

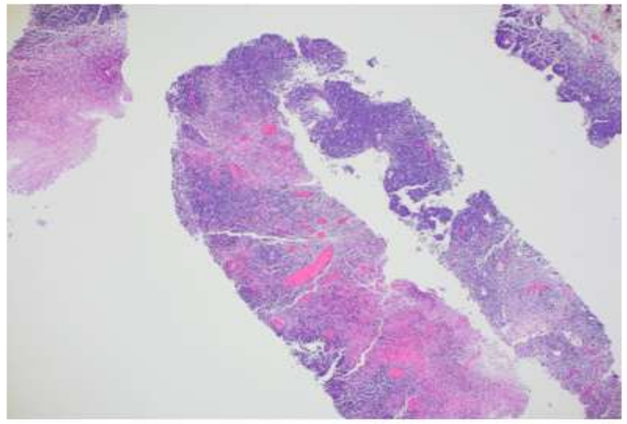

Figure 1

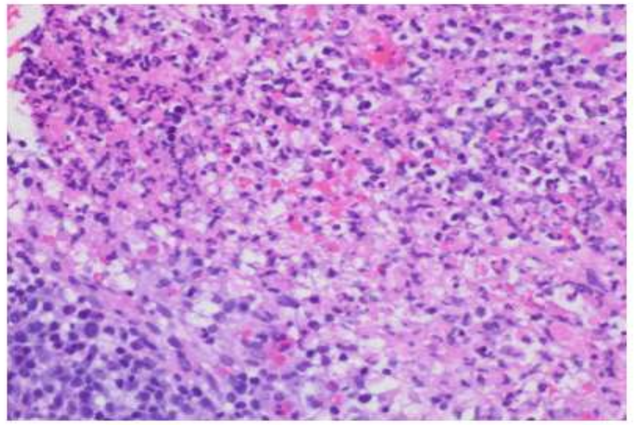

Figure 2

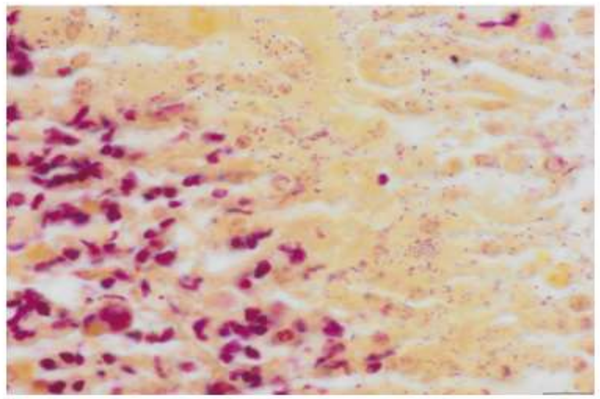

Figure 3

Figure 1: Low power field of the core fragments showing regional necrosis (pink) within lymphoid tissue (purple). Figure 2: 40X showing transition between normal lymph node in the lower left and neutrophils/necrotic debris with areas of necrosis (pink). Figure 3: Gram stain showing many gram positive cocci.

CONCLUSION

Necrotizing lymphadenitis (NL) from acute bacterial infection in males is rare and often misdiagnosed as malignancy or tuberculosis due to its atypical presentation. This case emphasizes the need for clinicians to consider a broad differential when assessing generalized lymphadenopathy, especially in high-risk areas. Early recognition and appropriate treatment of bacterial causes can prevent unnecessary interventions and improve outcomes. Vigilance in considering infectious etiologies, even when symptoms mimic oncologic or granulomatous diseases, is crucial for accurate diagnosis and management.

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