

Sham and Ersatz-*Yersinia pseudotuberculosis*

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Genus *Yersinia* is constituted of rod shaped bacteria configured as *Yersinia pestis*, *Yersinia enterocolitica* and *Yersinia pseudotuberculosis* which are virulent to humans.

The exceptionally encountered, gram negative bacillus *Yersinia pseudotuberculosis* induces an enteric illness. *Yersinia pseudotuberculosis* infection is acquired via consumption of contaminated food and water.

Yersinia pseudotuberculosis is confined to the soil and accumulates within fresh, farm plants and root vegetables. Besides, innumerable animal reservoirs and wildlife as birds, rodents, rabbits, deer, dogs, cats, and cattle may demonstrate the bacterium. Incubation period of the infection varies from 5 to 10 days with peak disease incidence at 4 days following bacterial ingress [1,2].

Yersinia pseudotuberculosis infection clinically simulates acute appendicitis or probable occurrence of an abdominal mass. Surgical laparotomy expounds mesenteric lymphadenitis. The self limited condition may be associated with Kawasaki disease [1,2].

Quantifiably significant inoculum of the entero-pathogen, *Yersinia pseudotuberculosis* is necessitated to induce human infection. Pre-eminently, a virulence factor, plasmid-encoded protein augments bacterial invasiveness wherein *Yersinia pseudotuberculosis* may thrive intracellularly [2,3].

The siderophore-mediated iron scavenging system enmeshed within *Yersinia pseudotuberculosis* contributes to bacterial virulence. *Yersinia pseudotuberculosis* may be appropriately discerned by polymerase chain reaction (PCR). Besides, cogent cultures may be employed for diagnosis [2,3].

Grossly, the infection is associated with inflammation of terminal ileum and cecum [3,4].

Upon microscopy, lymph node capsule is thickened and oedematous.

Configured epithelioid cell granuloma is accompanied by centric necrosis and micro-abscess. Immunoblasts and plasma cells appear aggregated within cortex and para-cortical region. Enlarged lymphocytes are confined within lymphatic sinuses. Hyperplasia of germinal centre or lymphoid hyperplasia is observed [4,5].

Mesenteric lymph nodes and Peyer's patches are imbued with epithelioid cell granulomas. Foci of coagulative necrosis are discerned. During sepsis, granulomatous abscess may occur within hepatic, pulmonary or renal parenchyma, spleen or gastrointestinal tract [4,5].

Type of Infection	Mild symptoms	Severe symptoms
Primary	Mild enteritis Fever, abdominal pain, diarrhoea. Mainly in children Acute infection Self-limited, intestinal infection (enteritis/gastroenteritis) spreads to mesenteric lymph nodes. Acute enteritis/gastroenteritis, mesenteric lymphadenitis Diarrhoea, fever and abdominal pain. May resemble acute appendicitis	Acute abdominal pain, Painful pseudo-appendicitis caused by mesenteric lymphadenitis Acute infection or septicaemia within the elderly, subjects with multiple co-morbidities as diabetes or liver diseases (cirrhosis), iron overload
Secondary	Reactive arthritis after outbreak with serotype O:3 Enthesopathy, HLA-B27+ disease, sacroiliitis, painful Achilles tendon, heel pain Non articular, erythema nodosum, desquamation, pneumonia, nephritis	Recurrent reactive arthritis
FESLF	Severe, cyclical toxic-allergic syndrome, gastroenteritis, mesadenitis, appendicitis, hepatitis, pancreatitis, pneumonia, myocarditis, meningencephalitis, nephritis, scarlet-like form and nodular erythema, arthralgia. Lethal septicaemia	Recurrent FESLF. Preponderant in Russia and Japan

Table: Clinical features of *Yersinia pseudotuberculosis* [2].

FESLF: Far Eastern Scarlet Fever.

Gram's stain depicts motile, gram negative, polymorphic, coccoid or ovoid bacteria [6,7].

Yersinia pseudotuberculosis inhabits and propagates within the gastrointestinal tract as Peyer's patches with consequent dissemination into hepatic parenchyma, spleen, mesenteric lymph nodes or a direct bacterial transmission [6,7].

Yersinia pseudotuberculosis infection requires segregation from conditions as appendicitis, pancreatitis, inflammatory bowel disease, gastroenteritis, scarlet fever, toxic shock syndrome or leptospirosis [7,8].

The self-limited *Yersinia pseudotuberculosis* infection may be associated with toxic symptoms, septic syndrome or severe dehydration [8,9].

Supportive therapy may be beneficially adopted to treat the bacterial infection. Severe manifestations as sepsis concurring with immunosuppression or chronic liver disease may warrant the commencement of antibiotic therapy [8,9].

Agents as fluoroquinolones, ampicillin, ceftriaxone, doxycycline and gentamycin may be suitably employed for treating *Yersinia pseudotuberculosis* infection [8,9].

Severe gastrointestinal haemorrhage or intestinal obstruction may be suitably managed with surgical manoeuvres as exploratory laparotomy [8,9].

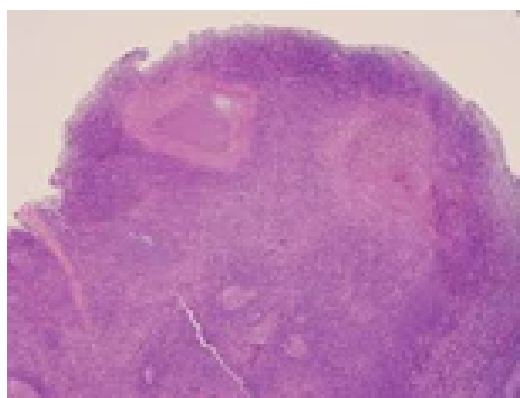


Figure 1: *Yersiniosis* demonstrating foci of lymphoid hyperplasia and suppuration. Epithelioid cell granulomas appear sprinkled within the lymphoid parenchyma [10].

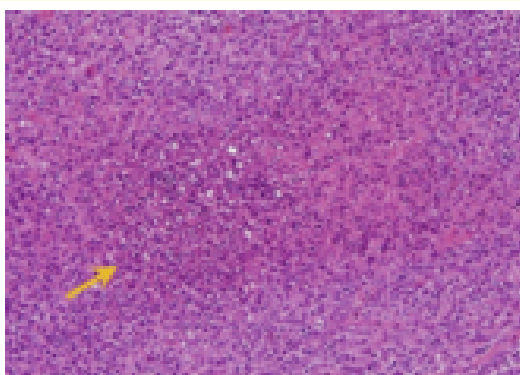


Figure 2: *Yersiniosis* expounding focal lymphoid hyperplasia and suppurative zones. Epithelioid cell granulomas appear disseminated within the lymphoid parenchyma [11].

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10. Image 1 Courtesy: Pathology outlines.
11. Image 2 Courtesy: *Journal of Infection and Chemotherapy*.

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