Lesser Sac Haematoma – Meliodosis: A Surgical Surprise

Abhijith V; Anuraj Appukuttan, Sherin Shaji, Gowri Gopal

BRS Dental College and Hospital, Panchkula, Haryana 134109

Conflicts of Interest: Nil

Corresponding author: Abhijith V

DOI: <https://doi.org/10.32553/ijmsdr.v5i9.753>

Introduction:

Melioidosis, a potentially fatal disease endemic in south east Asia and northern Australia is caused by *Burkholderia pseudomallei*, a potential bioterror agent. It is a motile, aerobic, non-spore forming gram negative bacillus often characterized by pneumonia, multiple abscesses, but it can also present as septic arthritis, cutaneous ulcer and osteomyelitis. Modes of acquisition are inhalation, inoculation and rarely ingestion from a contaminated environment¹. General and Gastro surgeons rarely come across abdominal melioidosis and rare is a lesser sac hematoma secondary to mycotic aneurysm of splenic artery caused by Melioidosis.

Clinical manifestations can vary from asymptomatic infections to localized abscesses to fulminating diseases with multi organ involvement and eventual death. Due to evolving lifestyle, extensive travel and climate changes the disease which was previously confined to specific countries have crossed their boundaries. Increase in cases of co morbid conditions like diabetes and immune-compromised states has added on to the cause of increasing rates of the disease worldwide. India has seen isolated case reports from few states. Most often *Burkholderia Pseudmallei* is misreported as *pseudomonas* species especially in resource poor laboratories making the disease potentially fatal due to error in the treatment protocol². Due to its high chances of recurrence, prolonged treatment with combinations of antibiotics is required for complete eradication.

Presentation of the Case

Here we present a case of a 40-year-old male patient, with CAD and Diabetes mellitus as comorbidities, from Thrissur district of Kerala. The patient is an expatriate who worked as a chef and butcher with frequent travel across kerala.

Primary clinical presentation was with fever and evening rise of temperature associated with multiple episodes of vomiting since 2 weeks.

Patient was diagnosed with *Burkholderia Pseudmallei* osteomyelitis of ileal bone, ischium and acetabulum 2 years back, which was subsequently treated with IV antibiotics for 2 weeks.

Clinical examination revealed Kernofsky performance score of 100 with stable vitals. On examination of abdomen, tenderness was noted over left hypochondrium. Other systems were within normal limits.

Relevant biochemical investigations revealed elevated ESR (104mm/hr), Anemia (11.6g/dl) and hypoalbuminemia(2.8g) suggestive of chronic inflammatory condition. Primary imaging with ultrasound of abdomen showed hepatomegaly, moderate splenomegaly with two large heterogeneous lesion in splenic parenchyma, possibility of splenic masses (both 5cm x 8cm) and hence followed by CECT, which showed splenomegaly with multiple abscess (3.6 to 6 cm) extending to sub-capsular plane and closely

abutting lateral chest wall, similar abscess observed in right lobe of liver (14mm x 12mm & 11mm x 7mm), large intramural hematoma involving posterior wall of stomach (8.6cm x

9.5cm x 10.2cm) extending superiorly & reaching to under surface of left hemi diaphragm – probably due to mycotic aneurysm leak, few enlarged upper para aortic lymph nodes

CECT Abdomen
showing multiple
splenic abscess

CT guided aspiration of the abscess was done and pus was sent for culture which confirmed the growth of *Burkholderia Pseudomallei*. Blood culture was also sent came sterile. Patient was managed with inj. Ceftriaxone 1gm IV thrice daily for 2 weeks. Patient became symptomatically better, review scan showed 41cc splenic abscess in lower pole and upper pole, a small 5cc abscess between two, contents in all abscess partly liquefied, stomach wall lesions persisting and patient was discharged with Tab. Sulphamethoxazole + trimethoprim twice daily for 2 weeks. Stomach wall hematoma was left intact in view of non-expanding nature and benign pathology.

Patient was reviewed 2 weeks later with no fresh complaints and review CECT scan showing no significant changes. Hence oral antibiotics were continued after discussion with microbiology team.

On his review after 4 weeks patient complained of generalized tiredness and blood stained vomiting. On abdominal examination he had diffuse tenderness with no associated guarding or rigidity. Lab investigations showed elevated total count (23520) and significant drop in hemoglobin (7.1g/dl). Patient was taken up for exploratory laparotomy on emergency basis in view of probable intragastric rupture of hematoma. Intraoperative findings include large lesser sac

hematoma arising from the mycotic aneurysm from splenic artery compressing posterior wall of stomach, causing a small erosion, multiple abscess within splenic parenchyma with large ones located in poles, with dense adhesion to colon, omentum

and kidney, Liver palpably normal with no ascites/deposits. The hematoma was evacuated and posterior gastric wall erosion sutured, with adhesiolysis and splenectomy and ligation of splenic artery proximal to aneurysm.

Lesser sac Hematoma

Hematoma removal

Since patient was asymptomatic after surgery, endoscopy was deferred. Post operatively he was managed with IV meropenem and was discharged on post-operative day 10 with oral cotrimoxazole. Now patient is on regular follow up since past 12 months and is till now asymptomatic

Clinical Diagnosis: Intra-abdominal abscess

Differential Diagnosis

- Mycobacterium Tuberculosis
- Pseudomonas

- *Staphylococcus aureus*
- Enterobacteriaceae
- *Entamoeba histolytica*

Pathological Discussion

Melioidosis can present as asymptomatic infection, or with severe clinical manifestations in immunocompromised patients³.

Infection mainly affects liver lungs, skin and subcutaneous tissue, but can also rarely affect CVS, CNS and lymph node⁴. Mycotic aneurysm is

one of the rarest presentations of melioidosis. Systemic involvement can manifest as pneumonia, Encephalomyelitis, Acute suppurative parotitis and rapidly progressing skin and soft tissue infections⁵.

According to a 20 year prospective study of 540 cases of melioidosis in northern Australia to understand the various clinical presentations and relation of the disease with various risk factors, 55% of the patients were bacteraemic, but mycotic aneurysm was only found in 2 of the cases⁶.

Isolation of *B.pseudomallei* from clinical specimens using Ashdown's medium containing crystal violet and gentamicin as selecting agents is still considered as gold standard for diagnosis of melioidosis. Since isolation of the agent is time consuming, preliminary serological tests are performed in endemic regions to initiate treatment⁷.

Pulmonary melioidosis may present as diffuse nodular infiltrates throughout lung fields, with cavitation in acute cases or as mixed nodules or patchy opacities with slower progression as in subacute and chronic cases⁸. Thin walled cavities which rarely contain air fluid level, sparing of lung apex, less occurrence of fibrosis and rare presentation of mediastinal and hilar lymphadenopathy differentiates it from tuberculosis.

Lesions in the periphery of the prostate with normal or mildly raised PSA points towards the infection in a patient with disseminated disease with lower urinary tract symptoms when compared to other bacterial prostatic infections where higher levels of PSA is the highlight⁹.

B.pseudomallei is susceptible to cotrimoxazole and doxycycline and resistant to aminoglycosides and polymyxin B².

Treatment of melioidosis comprises of 2 phases – acute phase in which parenteral antibiotics carbapenems and ceftazidime are given for 10 days followed by eradication phase with oral cotrimoxazole to complete total of 20 weeks which is mandatory due to high chance of

recurrence^{2,3}. With regard to mycotic aneurysm surgical replacement with deep vein as a vascular conduit (neoaortoiliac system bypass) has proven to be a definitive management with chance of postoperative complications like wound infections (29%), post-operative sepsis (18%), renal impairment (18%) and vascular graft infection or leakage (18%)⁶.

Surgeons commonly encounter melioidosis from a splenic abscess perspective. Successful treatment depends on correct identification of the organism for which a high index of suspicion is required with an equipped microbiological team to customize the antibiotic regimen for longer duration as incomplete treatment usually results in recurrence. A lesser sac haematoma secondary to splenic artery aneurysm due to melioidosis is indeed very rarer and hence the description of the case was deemed necessary to the surgeons operating in endemic areas.

Final Diagnosis

Multiple splenic abscess, hepatic abscess, lesser sac hematoma with sepsis secondary to *Burkholderia pseudomallei* infection

References

1. Jacob bodilsen, sten vammen, kurt fuursted et al; BMJ case rep.2014;2014:bcr2013202824; doi:10.1136/bcr-2013-202824
2. Isabella princess, R.Ebenezer, nagarajan ramakrishnan et al; melioidosis:an emerging infection with fatal outcomes; Indian J crit care med.2017 jun; 21(6):397-400; doi-10.4103/ijccm.IJCCM_122_17
3. Bart. currie, Dale A.Fisher,Nicholas M.Anstey et al; melioidosis : acute and chronic disease, relapse and reactivation;transactions of the royal society of tropical medicine and hygiene, volume 94, issue 3, may-june 2000, 301-304;https://doi.org/10.1016/s0035-9203(00)9033-X
4. Chlebicki MP,tan BH.six cases of suppurative lymphadenitis caused by *Burkholderia pseudomallei* infection.Trans R Soc Trop Med Hyg 2006;100:798-801

5. Allen C. Cheng, Bart J Currie; melioidosis: epidemiology, pathophysiology and management; American society of microbiology; doi:10.1128/CMR.18.2383-416.2005
6. Currie BJ, Ward L, Cheng AC. the epidemiology and clinical spectrum of melioidosis : 540 cases from the 20 year Darwin prospective study. PLoS Negl Trop Dis 2010;4:e900.
7. susanna kp lau, sddharth Sridhar , chi-chun ho et al; laboratory diagnosis of melioidosis : past present and future exp boil med (Maywood.2015 jun ; 240(6):742-751 ; doi : 10.1177/1535370215583801
8. Hind S Alsaif, sudhakar K venkatesh; melioidosis: spectrum of radiological manifestations; doi:10.4103/1658631X.178286
9. Morse LP, moller CC, Harvey E et al. prostatic abscess due to burkholderia pseudomallei: 81 cases from a 19 year prospective melioidosis study. J Urol 2009; 182:542-7.