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Invasive Klebsiella Pneumoniae Liver Abscess Syndrome Accompanied by Seminal Vesiculitis and Prostate Abscess in a Non-Diabetic Patient

Inder Preet Singh Bhatia[1*], Hitesh Sinduriyan[2], Sanjay Singh Rawal[3] and Udyangshu Saha[4]

[1]Department of Internal Medicine, Military Hospital, Pathankot, India

[2]Department of Radiodiagnosis, Military Hospital, Pathankot, India

[3]D.M. Pulmonary and Critical Care Medicine, department of Internal Medicine, Military Hospital, Pathankot, India

[4]Department of Internal Medicine, Military Hospital, Pathankot, India

***Corresponding author:**

Inder Preet Singh Bhatia,
Department of Internal Medicine, Military Hospital, Pathankot, India

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1. Abstract

1.1. Background

Seminal vesiculitis, Acute prostatitis or Prostate abscess is usually the complication of urinary tract infection. Simultaneous involvement of seminal vesicle, prostate, and liver secondary to Klebsiella pneumoniae is rare and has rarely been reported in the past as per the Pub Med search.

1.2. Case Description

Herein we report a 41 years old male, who presented with history of fever of 05 days duration, associated with significant unintentional weight loss. He was diagnosed as a case of Seminal Vesiculitis, Prostate & Liver abscess. His urine and blood culture yielded Klebsiella pneumoniae. He was successfully managed initially with parenteral antibiotics and then with oral antibiotics.

1.3. Conclusion

Disseminated Klebsiella pneumoniae infection in an immunocompetent patient is quite a rare presentation. Clinicians should be aware about the multi-organ involvement pertaining to Klebsiella, as timely diagnosis of this disseminated state can prevent the unfavourable outcome.

2. Introduction

Prostate abscess (PA) is a complication of the urinary tract infections. The common risk factors for PA are diabetes, immunocompromised state, liver cirrhosis, HIV, renal transplantation, long term indwelling catheterisation [1,2]. This condition is commonly associated with gram negative organisms, especially that belonging to the Enterobacteriaceae family. It accounts for 6% of cases of bacterial prostatitis [2]. Furthermore, it can be diagnosed clinically, through urine examination and radiological evaluation. Mortality of this condition varies between 1-16% [2]. It is treated with antibiotics for a duration of 4 to 6 weeks [3]. Invasive Liver Abscess syndrome (ILAS) is a condition attributed to Klebsiella pneumoniae causing liver abscess with multi-organ involvement in the absence of hepatobiliary disease. This condition was initially described in the 1980s [4]. ILAS with prostatic abscess and seminal vesiculitis have rarely been reported in the past [5].

3. Case Description

41 years initially presented on 05 March 2025 with history of fever of 05 days duration, associated with chills. It was associated with pain over the right lower side of the chest, unintentional weight loss of 4-5 kg with decreased appetite. There was no history of cough/ expectoration/ wheeze/ breathlessness. No history of increased frequency of urine/ burning micturition/ urgency of urine was there at the time of admission. There was no history of intraabdominal surgery or trauma in the past.

His vitals included a pulse of 100 beats per min, blood pressure of 120/76 mm of Hg, temperature of 101o F, respiratory rate of 18 per min. There was no pallor/ icterus/ clubbing/ cyanosis/ lymphadenopathy. Systemic examination was unremarkable.

Investigation revealed Hb of 15.2 gm/dl, a total leucocyte counts of 4,900. The biochemical parameters were normal. HbsAg, Anti HCV, HIV were negative. The chest X-ray was normal. Peripheral blood smear for malarial parasite & dengue serology were negative. Initial ultrasound abdomen was normal. He became

afebrile on day 03 of admission. He was not started on antibiotics initially. On day 7 of admission, he again developed fever, which was continuous in nature with a maximum temperature of 103o F and was sick looking. This time, it was associated with burning micturition, haematuria, increased frequency of urine, hesitancy, pain in suprapubic area and right hypochondrium. Evaluation revealed a total leucocyte counts of 29,800 with neutrophilic leucocytosis, toxic granules and toxic vacuoles were seen on peripheral blood film (Table 1). Urine examination revealed numerous RBC and WBC. He was started on piperacillin tazobactam 4.5 grams every 06 hourly. He underwent USG abdomen which revealed features of liver abscess (involving segment IV a with approximate volume of 28 cc), seminal vesiculitis and prostate abscess (Figure 1, 2 & 3). MRI abdomen was done to confirm the findings of ultrasound (Figure 4). Metronidazole was added considering liver abscess. Amoebic serology was negative. Subsequently, blood and urine culture & sensitivity revealed Klebsiella pneumoniae, sensitive to piperacillin/tazobactam, amoxicillin-clavulanic acid, ceftriaxone, cefixime, cefuroxime, amikacin, meropenem, ciprofloxacin. Fundoscopy and CT head/chest were done to rule out the involvement of infection at distant sites. Parenteral antibiotics were continued for a total of 21 days and then de-escalated to oral antibiotics. On day 21 of antibiotics, repeat ultrasound of the abdomen revealed resolution of liver & prostrate abscess (Figure 5 & 6) and seminal vesiculitis. Subsequently, oral antibiotics were stopped after 02 weeks as he remained stable and serial cultures showed no growth.

Table 1: Lab Parameters.

Lab Parameters	On admission	Day 7	Day 10	Day 24	At discharge
Hb g/dl	15.2	13.3	12.8	13.9	12.9
TLC /uL	4,900	29,800	23,000	4500	9,500
DLC	N-68%, L- 28 %	N- 91 % L- 04%	N- 86 % L- 07 %	N- 52 % L - 37%	N- 69% L – 24%
Platelets 10^3/uL	1,41,000	1,51,000	2,25,000	2,55,000	2,38,000
PT INR aPTT	13.2 1.0 32	14.0 1.0 31			
Urea/Creatinine mg/dl	43/1.0	19/1.0		30/1.0	28/0.8
Na^+/K^+ mEq/L	134/4.2	131/4.1		141/4.4	139/4.6
$Ca^{2+}/Po4^{3-}$ mg/dl	8.8/3.9	8.9/3.5			9.0/3.7
Bilirubin (D/I) mg/dl	0.3/0.2	0.6/0.2		0.5/0.1	0.3/0.2
SGOT/SGPT IU/L	38/42	30/42		35/60	28/47
ALP/GGT	90/120				-
Procalcitonin ng/ml		2.83		0.4	<0.05
Urine C/S Blood C/s			K. pneumonia		
Urine MTB PCR			No AFB seen		
HbsAg Anti HCV HIV		Negative Negative Negative			

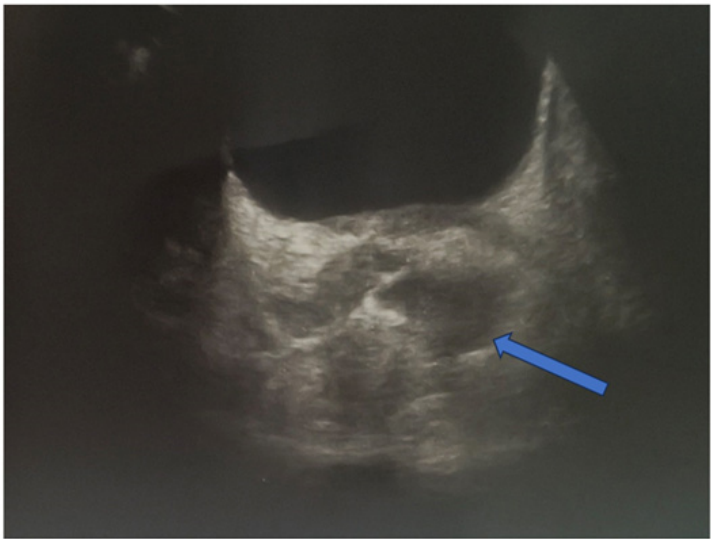

Figure 1: USG revealing thickened hypoechoic bilateral seminal vesicles with diameter measuring up to 28 mm. The margins of the seminal vesicles are ill defined with surrounding echogenic pelvic fat stranding. All the features are s\o Seminal Vesiculitis.

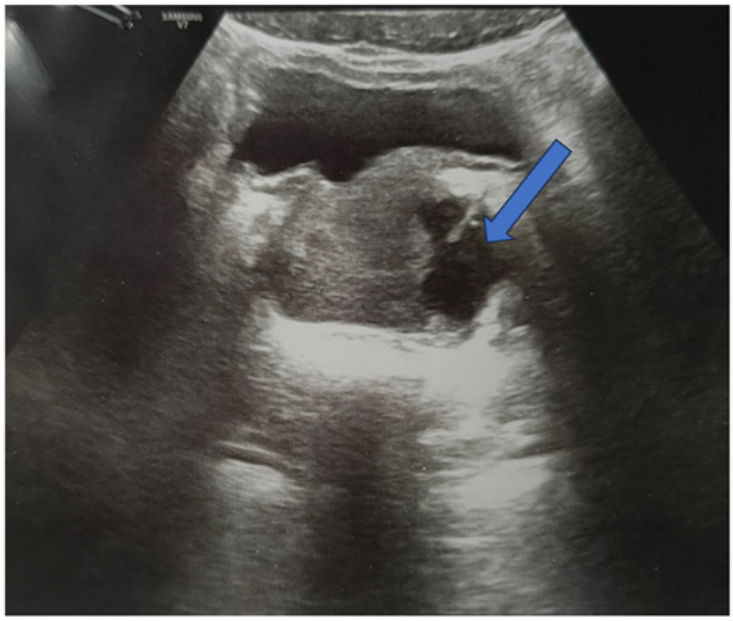

Figure 2: USG Prostrate revealing prostatomegaly (Vol 80 cc). There is an oval shape hypoechoic area involving left half of the prostatic parenchyma s\o prostatic abscess.

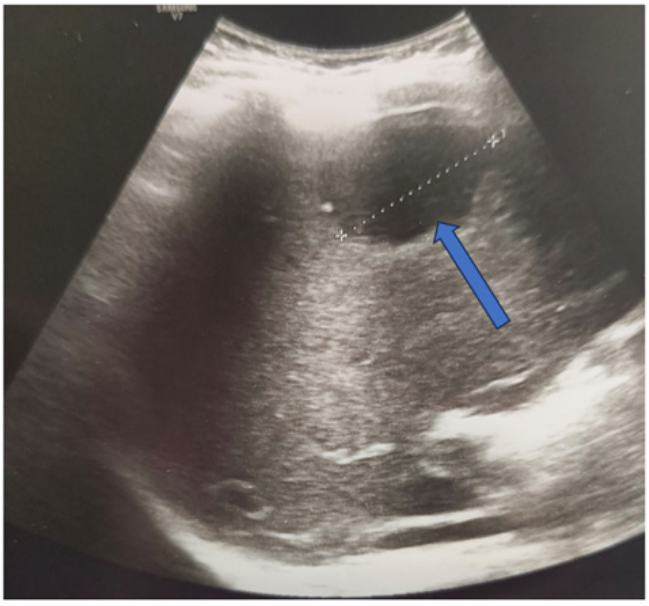

Figure 3: USG abdomen revealing hepatic abscess involving segment IV a of liver (approximately 25 cc).

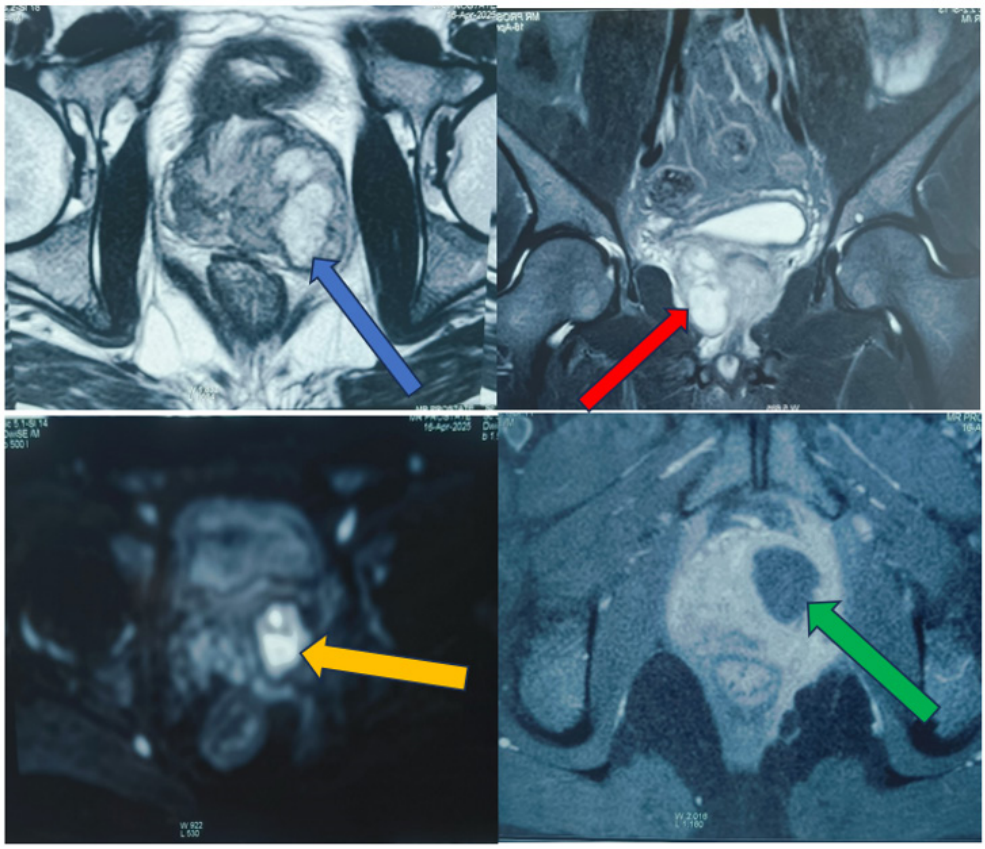

Figure 4: CEMRI prostrate revealing hyperintense collections within the prostatic parenchyma on T2W image (blue & read arrows). DWI revealing restriction of diffusion within these collection (indicated by yellow arrow).on post contrast images, there is no enhancement within these areas suggestive of abscess (as indicated by green arrow).

Figure 5: Follow up USG revealing near complete resolution of the prostatic abscess.

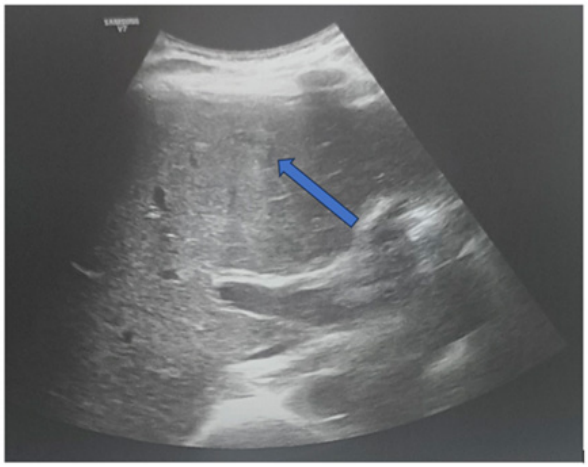

Figure 6: Follow up USG revealing complete resolution of liver abscess involving segment IV a of liver.

4. Discussion

ILAS is a clinical condition involving liver abscess with concomitant distant metastatic infection. It causes non-specific symptoms like fever, decreased appetite, unintentional weight loss, pain right hypochondrium. Dissemination of Klebsiella pneumoniae causes involvement of extrahepatic sites like brain, meninges, eye, middle ear, lungs, prostate glands [1,6]. The invasive and hypervirulent nature of Klebsiella sp in such cases is attributed to the K1 and K2 serotypes, which results in hypermuco-viscosity and resistance to phagocytic uptake by neutrophils in vitro [7-10]. The common risk factors are diabetes mellitus, chronic liver disease, malignancy, use of steroids in the past. Among these, diabetes being the most common one. The treatment modalities include antibiotics and pigtail drainage. Usually, this condition is susceptible to most of the antibiotics, however as per the study published in 2017 showed emergence of resistance to antibiotics especially to the carbapenems [11].

Our patient initially presented with a history of fever of short duration, associated with weight loss and pain over the right lower side of the chest. Initial chest X-ray and ultrasound abdomen were normal. Initially, he was not considered for antibiotics as he became afebrile on day 3 of admission. He again developed fever on day 7 along with urinary symptoms and was sick looking. He was started on parenteral antibiotics. Repeat ultrasound abdomen with corroborative MRI abdomen revealed features of liver & prostatic abscess with seminal vesiculitis. No subcapsular extent of liver abscess was noted. Our patient lacked any risk factor for prostate/ liver abscess. Possibility of tuberculosis was considered, however there was no evidence of tuberculosis on CT chest, ultrasound abdomen and urine MTB PCR was negative. Urine and blood culture revealed Klebsiella pneumoniae sensitive to most of the antibiotics. He was diagnosed as a case of ILAS with Seminal Vesiculitis and Prostate Abscess and was managed with piperacillin tazobactam for 03 weeks followed by oral antibiotics for 02 weeks. Pigtail drainage was not considered as the patient had an early response to antibiotics and became afebrile after 03 days of antibiotics and his general condition started improving. Repeat imaging at 03 weeks revealed resolution of abscess in both liver & prostate and seminal vesiculitis. As per the literature, this condition is managed with antibiotics for prolonged duration of 6-8 weeks [5]. However, in our case antibiotics were stopped after 05 weeks as the follow-up imaging showed resolution of abscess.

5. Conclusion

Disseminated Klebsiella pneumoniae infection in an immunocompetent patient is quite a rare presentation. This case illustrates the importance of timely diagnosis of this condition. Clinicians should be aware about this condition and multi-organ involvement pertaining to Klebsiella, as timely diagnosis of this state can prevent the further dissemination and unfavourable outcome.

5.1. Learning Points

• Concurrent Liver abscess, Prostate abscess and Seminal vesiculitis is a rare presentation.

• Lack of clinical suspicion/knowledge can inadvertently lead to incomplete diagnosis and shorter antibiotic course and eventually poor clinical outcome.

6. Disclosure

Conflict of Interest: The authors report no conflicts of interest or competing interests related to this study.

Ethics approval and consent to participate: No ethic approval required as per institution policy. Written informed consent was taken to participate in this study.

References

1. Choi J, Lee DG. Occurrence of liver abscess in patients with acute prostatitis. Investig Clin Urol. 2024; 65(5): 480-6.
2. Venyo AKG. Prostatic Abscess: A Review and Update. Archives of Medical Case Reports and Case Study. 2021; 4(6): 01-22.
3. Naber KG. Antimicrobial Treatment of Bacterial Prostatitis. European Urology Supplements. 2003; 2(2): 23-6.
4. Chang FY, Chou MY, Fan RL, Shaio MF. A clinical study of Klebsiella liver abscess. Taiwan Yi Xue Hui Za Zhi. 1988; 87(3): 282-7.
5. Liao CY, Yang YS, Yeh YC, Ben RJ, Lee CC. Invasive liver abscess syndrome predisposed by Klebsiella pneumoniae related prostate abscess in a nondiabetic patient: a case report. BMC Res Notes. 2016; 9(1): 395.
6. Evangelista V, Gonçalves C V, Almeida R, Henriques C. Klebsiella pneumoniae Invasive Syndrome. Eur J Case Rep Intern Med. 2018; 5(3): 000800.
7. Lin JC, Siu LK, Fung CP, Tsou HH, Wang JJ. Impaired Phagocytosis of Capsular Serotypes K1 or K2 Klebsiella pneumoniae in Type 2 Diabetes Mellitus Patients with Poor Glycemic Control. J Clin Endocrinol Metab. 2006; 91(8): 3084-7.
8. SiuLK, Fung CP, Chang FY, Lee N. Molecular Typing and Virulence Analysis of Serotype K1 Klebsiella pneumoniae Strains Isolated from Liver Abscess Patients and Stool Samples from Noninfectious Subjects in Hong Kong, Singapore, and Taiwan. J Clin Microbiol. 2011; 49(11): 3761-5.
9. Ku YH, Chuang YC, Yu WL. Clinical spectrum and molecular characteristics of Klebsiella pneumoniae causing community-acquired extrahepatic abscess. J Microbiol Immunol Infect. 2008; 41(4): 311-7.
10. Lin JC, Chang FY, Fung CP, Xu JZ, Cheng HP. High prevalence of phagocytic-resistant capsular serotypes of Klebsiella pneumoniae in liver abscess. Microbes Infect. 2004; 6(13): 1191-8.
11. Lee CR, Lee JH, Park KS, Jeon JH, Kim YB. Antimicrobial Resistance of Hypervirulent Klebsiella pneumoniae: Epidemiology, Hypervirulence-Associated Determinants, and Resistance Mechanisms. Front Cell Infect Microbiol. 2017; 7: 483.