

# Klebsiella Pneumoniae Liver Abscess Secondary To Acute Prostatitis.

H ullah wani, B Ahmed, N Hassan, G wani

## Citation

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## Abstract

Prostatitis is usually complication of acute urinary tract infection. Pyogenic liver abscess following acute prostatitis has not been reported. We report a 45 year old male with acute bacterial prostatitis and urinary tract infection caused by *Klebsiella pneumoniae* associated with large liver abscess. The patient was admitted with abdominal pain, fever, dysuria and difficult urination. Physical examination revealed right hypochondrial and lower abdominal tenderness and prostatic tenderness on digital rectal examination. Abdominal radiography revealed enlarged prostate, and a large liver abscess. The culture from EPS and pus from the liver had grown *Klebsiella pneumoniae*. The patient was successfully treated with pigtail drainage of the liver abscess and with antibiotics for 6 weeks.

## CASE

A 45 years old male with 5 years history of type 2 diabetes mellitus on oral hypoglycaemic drugs presented with 2 weeks history of high grade fever, chills, malaise, dysuria, and upper and lower abdominal pain. The patient had also obstructive symptoms, in the form of dribbling and acute urinary retention.

On examination the patient was dehydrated with heart rate 124/min, B.P 110/67 and temperature 39.5°C. On abdominal examination, there was right hypochondrial and suprapubic tenderness, with hepatomegaly. Shifting dullness was positive. Digital rectal examination showed extremely tender boggy prostate.

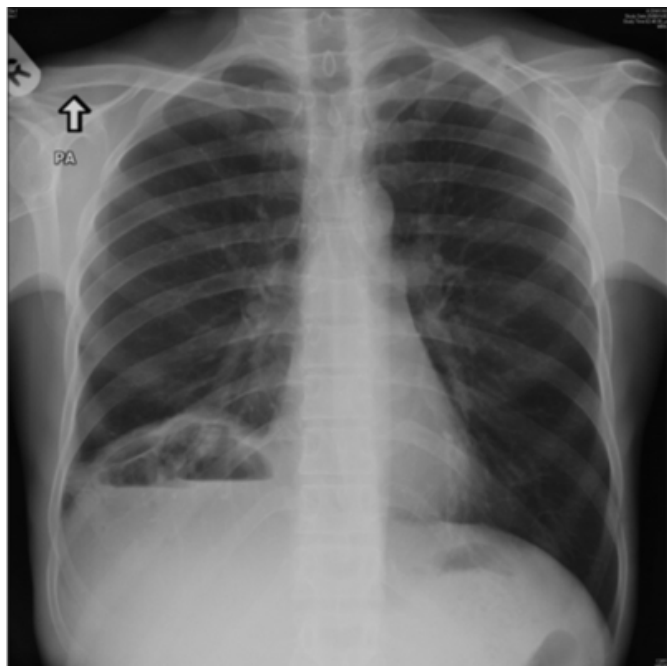
Investigations showed, white cell count, 30,000; neutrophils, 80%; MCV 84 fL; MCH, 27 pg; platelets, 548 X10<sup>9</sup> /L and hemoglobin, 11.85 g/dl (12–16). ESR, 32 mm/h (0–20). APTT, 32.4 seconds (27–41); PT 11.2 (11–14); INR, 1.01 (0.8–1.2); AST of 47 U/L (0–37 U/L), ALT of 30 U/L (0–37 U/L), alkaline phosphatase of 138 U/L (36–110 U/L), and  $\alpha$ -feto protein, 11  $\mu$ g/L (0–20  $\mu$ g/L). Other laboratory studies revealed the total bilirubin, 16  $\mu$ mol/L (0–17  $\mu$ mol/L); direct bilirubin, 5.3  $\mu$ mol/L (0–5  $\mu$ mol/L), albumin, 22 g/L (33–53 g/L); PSA total, 0.213  $\mu$ g/L (0–2), PSA free, 0.018  $\mu$ g/L (0–0.4). HIV and serology for hepatitis B and C was negative. Urine ananlysis revealed wbcs too numerous to count; urine culture and culture from EPS showed heavy growth of *Klebsiella pneumoniae*. Blood culture from both

aerobic and anaerobic vials showed growth of extended-spectrum beta-lactamase (ESBL) producing *Klebsiella pneumoniae*. Chest x-ray; (figure 1) showed air fluid level below the right diaphragm from the abscess in the right lobe of liver. CT SCAN ; (figure 2 ),revealed huge right hepatic lobe abscess measuring about 10 x 8 cm with air fluid level. This abscess was involving segment VII and segment VIII. The urinary bladder was thickened secondary to urinary tract infection. The prostate was enlarged and hypodense having fluid density inside it (figure 3). Transrectal Ultrasound; (figure 4), showing the prostate was enlarged, with volume 45 ml. The prostate parenchyma was showing multiple heterogeneous hypoechoic areas as compared to the surrounding parenchyma ( abscesses ). The right prostatic lobe abscess measured about 1.9 x 1.2 cm and the left prostatic lobe abscess measured about 1.9 x 1.3 cm. Colonoscopy (figure 5) up to terminal ileum was normal , except for the submucosal buldge anteriorly in the rectum due to enlarged prostate.

The patient was managed with ultrasound guided pig tail drainage of the abscess. The gram stain and culture from the pus showed growth of *Klebsiella pneumoniae* and was negative for acid fast bacilli. The patient was treated with intravenous antibiotics imipenam for 3 weeks followed by oral ciprofloxacin for another 3 weeks.

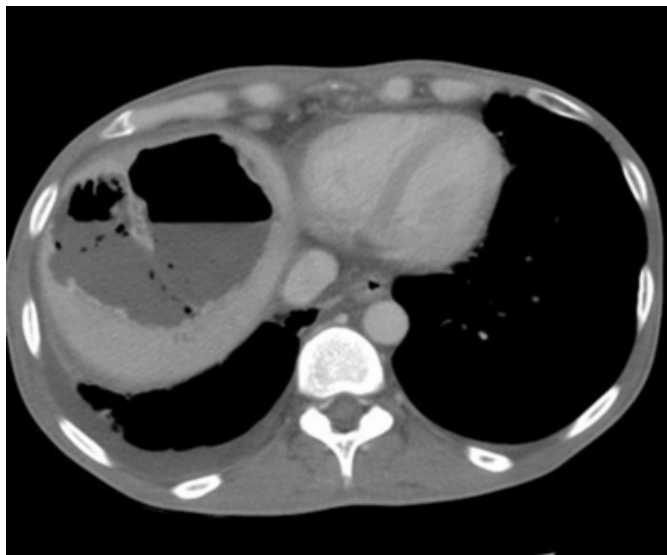
**Figure 1**

Figure1: X-ray chest and upper abdomen showing air fluid level below the right diaphragm from the liver abscess.



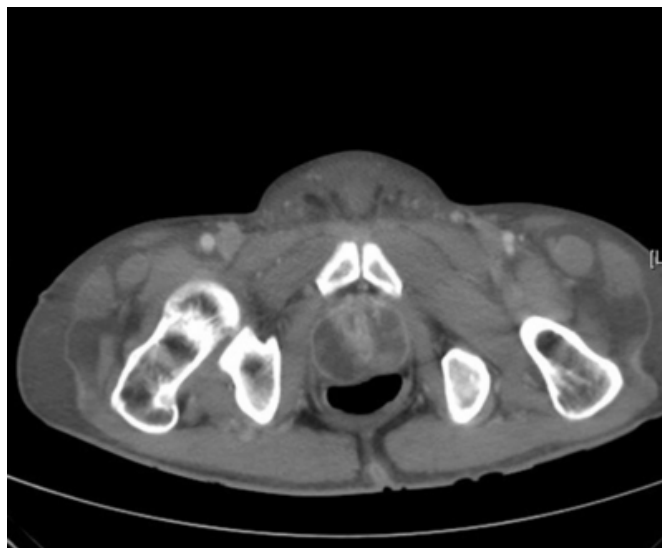
**Figure 2**

Figure 2: CT Scan showing right hepatic lobe abscess involving segment VII and segment VIII.



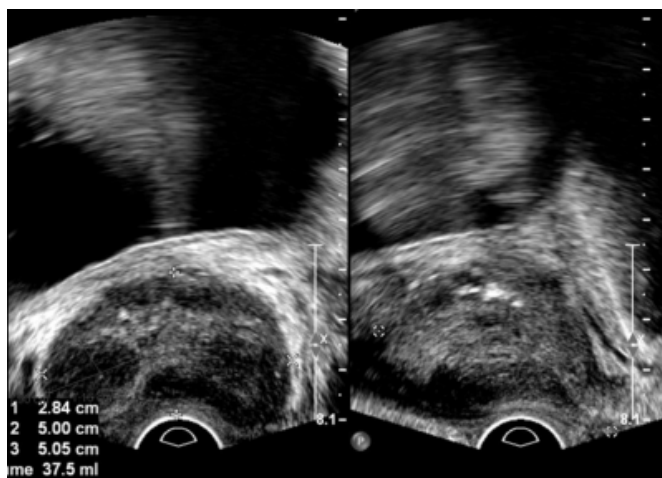
**Figure 3**

Figure 3: CT scan showing enlarged prostate with bilateral hypoechoic areas.



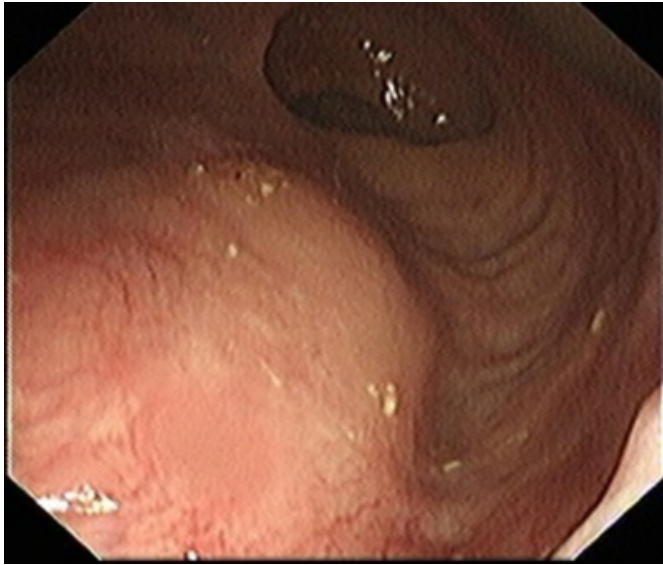
**Figure 4**

Figure 4: Transrectal Ultrasound showing prostatic abscesses.



**Figure 5**

Figure 5: Colonoscopy picture from rectum showing submucosal buldge in rectum due to enlarged prostate.



**DISCUSSION**

Prostatitis syndromes tend to occur in young and middle-aged men. Entry of microorganisms into the prostate gland almost always occurs via the urethra. The flora of acute prostatitis reflects the spectrum of agents causing urethritis, and urinary tract infection. Gram-negative infections, especially with enterobacteriaceae are most common.<sup>[1]</sup> Clinical symptoms together with an edematous and tender prostate on physical examination should prompt a diagnosis of acute prostatitis. Although most patients with acute prostatitis respond well to antibiotic therapy, a variety of complications can occur, including bacteremia, epididymitis, chronic bacterial prostatitis and prostatic abscess. Liver abscess secondary to acute prostatitis with prostatic abscess is very rare association and has not been reported.

*Klebsiella pneumoniae* primary liver abscess has been defined as a liver abscess occurring in the absence of predisposing intraabdominal factors, such as hepatobiliary disease, colorectal disease, or a history of intraabdominal surgery or trauma.<sup>[2]</sup> Primary invasive liver abscess syndrome due to *K. pneumoniae* has been described in East Asia with risk factors for liver abscess include diabetes, and

other immunocompromised conditions.<sup>[2,3]</sup> Underlying biliary tract disease, such as biliary tract obstruction due to gallstones or malignancy, accounts for 40 to 60 percent of pyogenic liver abscesses. Most such pyogenic liver abscesses are polymicrobial; mixed facultative and anaerobic species are the most common pathogens, although anaerobes are probably under-reported as they are difficult to culture and characterize in the laboratory.<sup>[4,5,6]</sup> A monomicrobial liver abscess due to a streptococcal or staphylococcal species should prompt evaluation for an additional source of infection. Metastatic infection can also occur with *K. pneumoniae* infections other than liver abscess. These infections are endophthalmitis, meningitis and brain abscess.

Diagnosis and treatment of liver abscess due to *K. pneumoniae* are similar to those in other causes of pyogenic liver abscess. Percutaneous drainage guided by imaging (either ultrasonography or CT) is used for both diagnosis and treatment and is preferred over surgical drainage. Although the mortality rate is relatively low, the prognosis in patients with metastatic endophthalmitis and meningitis is often poor.<sup>[7,8]</sup>

**References**

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**Author Information**

**Hamid ullah wani, MD;DM**

Assistant Consultant, Department of Medicine, Division of Gastroenterology

**Bilal Ahmed**

Post Graduate Fellow, Max Healthcare

**Nadeem Hassan, MD**

Consultant, Department of Medicine, Division of Gastroenterology

**Gull Mohamed wani, BDS**

Govt. Dental College