

A Case of Multiple Gas-Forming Pyogenic Liver Abscess in Patient with Type 2 Diabetes

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BACKGROUND

Gas-forming pyogenic liver abscess is an uncommon, life-threatening, necrotizing infection. Patients with diabetes are more likely to have a pyogenic liver abscess with gas formation, which is associated with higher morbidity and mortality. This disease entity requires special attention by physicians due to its nonspecific presentation such as fever, nausea, vomiting, anorexia, malaise and/or abdominal pain.

Here, we experienced a case of gas-forming pyogenic liver abscess caused by *Klebsiella pneumoniae*, as proven by blood culture, in diabetic patient.

CLINICAL CASE

- 77 year-old, Male
- Chief complaint & Present illness
 - He had suffered from fever and chill for 2days. He presented general weakness, poor oral intake, nausea and vomiting.
- Past medical history
 - Type 2 diabetes (+) : 25 years ago
 - Hypertension (+) : 3 years ago
- Initial vital signs
 - Blood pressure 160/70mmHg, Heart rate 98/min, Respiratory rate 20/min, Body temperature 38°C
- Physical examination
 - Acute ill appearance
 - Liver was palpable approximately 2cm below the right costal margin
 - Right upper quadrant tenderness of the abdomen was present.
- Initial Laboratory findings
 - WBC: 29,030/uL (Neutrophil 94.3%), Hemoglobin : 11.8 g/dL, platelet:128,000/mm³
 - CRP: 19.21 mg/dL, Procalcitonin : 12.3 ng/ml
 - BUN: 52.7 mg/dL, Creatinine: 2.16 mg/dL
 - Total protein: 5.14 g/dL, Albumin: 2.05 g/dL,
 - AST : 271 IU/L, ALT: 295 IU/L
 - T-Bil : 1.78 mg/dL, D-Bil : 1.32 mg/dL
 - Random serum glucose: 448 mg/dL, HbA1c : 8.2%
- Initial Chest x-ray findings were unremarkable.

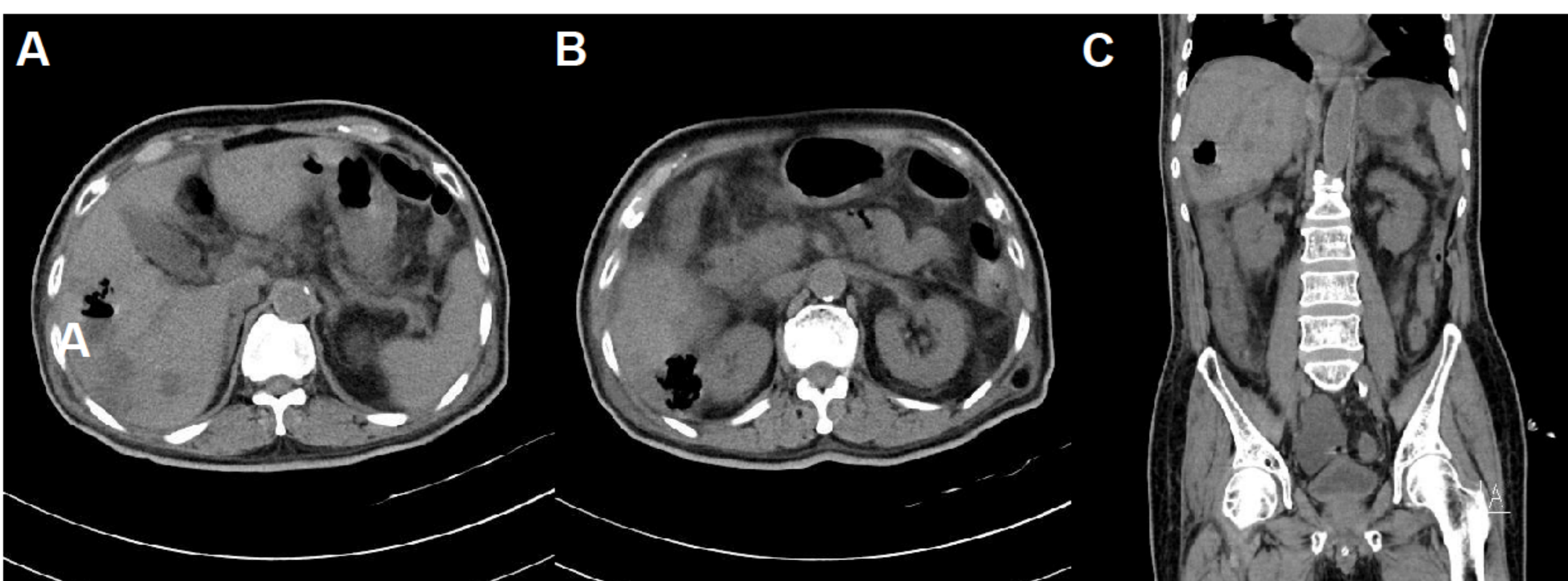


Figure 1. Initial abdomen computed tomography(CT) shows 1.5~4.4cm sized multiple gas-forming lesions in both lobes of liver. (A, B, C,)

Progression

Blood cultures were performed and empirically carbapenem was intravenously given, immediately.

On the second day of admission, fever was not subsided in spite of proper management and marked thrombocytopenia was noted (PLT 21,000/mm³). Aspiration and drainage for the abscesses were performed (figure 2). Blood sugar was well controlled after insulin treatment. On hospital day 5, respiratory failure occurred and the patient required ventilator care. *Klebsiella pneumoniae* was grown on blood cultures and was sensitive to both cefotaxime and ciprofloxacin. But culture result from drained pus was negative. Antibiotics were shifted to third generation of cephalosporin. The patient was slowly improved with intensive care for 3 weeks after admission. Even though closed monitoring and proper treatment, pneumonia was developed. Respiratory failure was occurred again and he was expired.

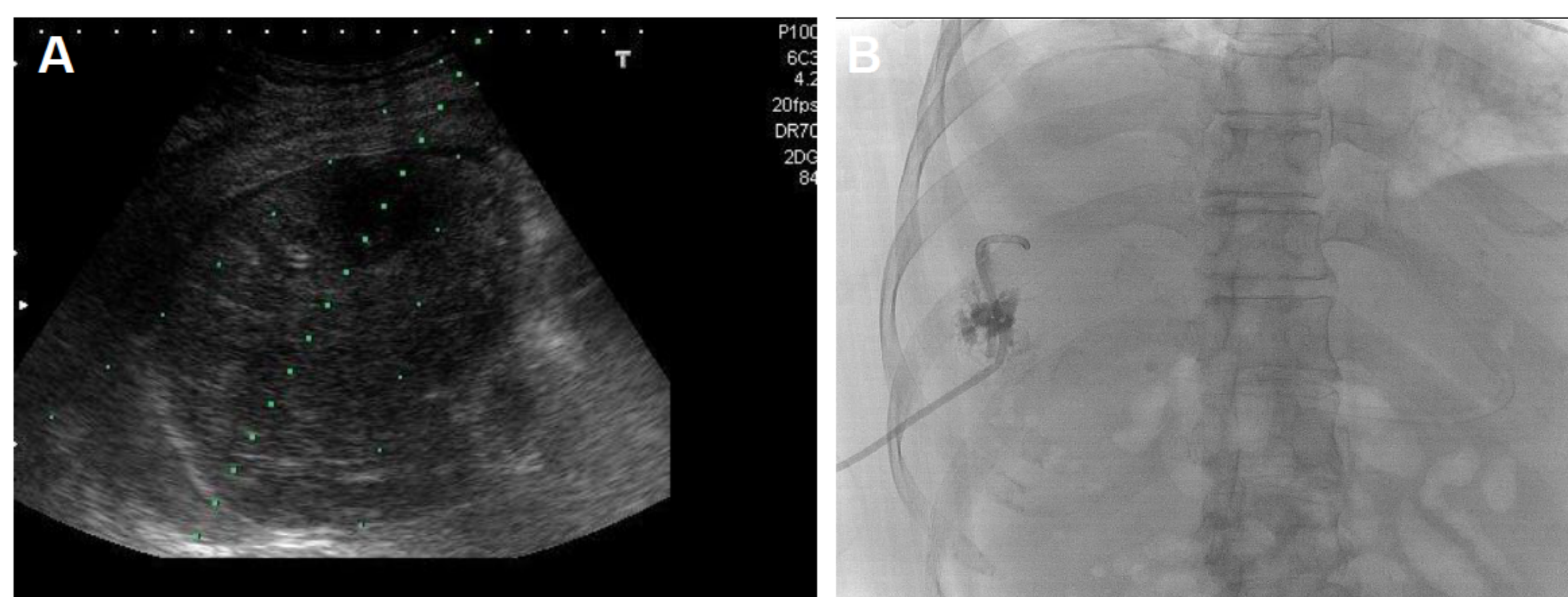


Figure 2. Percutaneous transhepatic aspiration and drainage for abscesses were performed. (A ; Ultrasonographic finding B ; Fluoroscopy guided catheter drainage)

| | WBC (/uL) | Hb (g/dL) | PLT (/mm ³) | CRP (mg/dL) | BUN (mg/dL) | Cr (mg/dL) | AST/ALT (IU/L) | Glucose (mg/dL) |
|--------|-----------|-----------|-------------------------|-------------|-------------|------------|----------------|-----------------|
| HD #1 | 29,030 | 11.8 | 128 | 19.21 | 52.7 | 2.16 | 271/295 | 448 |
| HD #2 | 32,280 | 10.6 | 21 | 12.083 | 90.12 | 2.28 | 842/671 | 353 |
| HD #5 | 15,680 | 9.5 | 64 | 7.082 | 86.44 | 1.51 | 112/235 | 223 |
| HD #12 | 13,700 | 8.9 | 92 | 4.708 | 87.38 | 1.85 | 20/30 | 276 |
| HD #20 | 10,660 | 8.2 | 66 | 3.751 | 75.35 | 1.89 | 14/11 | 220 |
| HD #37 | 20,040 | 7.6 | 10 | 7,498 | 23.32 | 1.13 | 43/44 | 151 |

Table 1. Laboratory findings in hospital days.

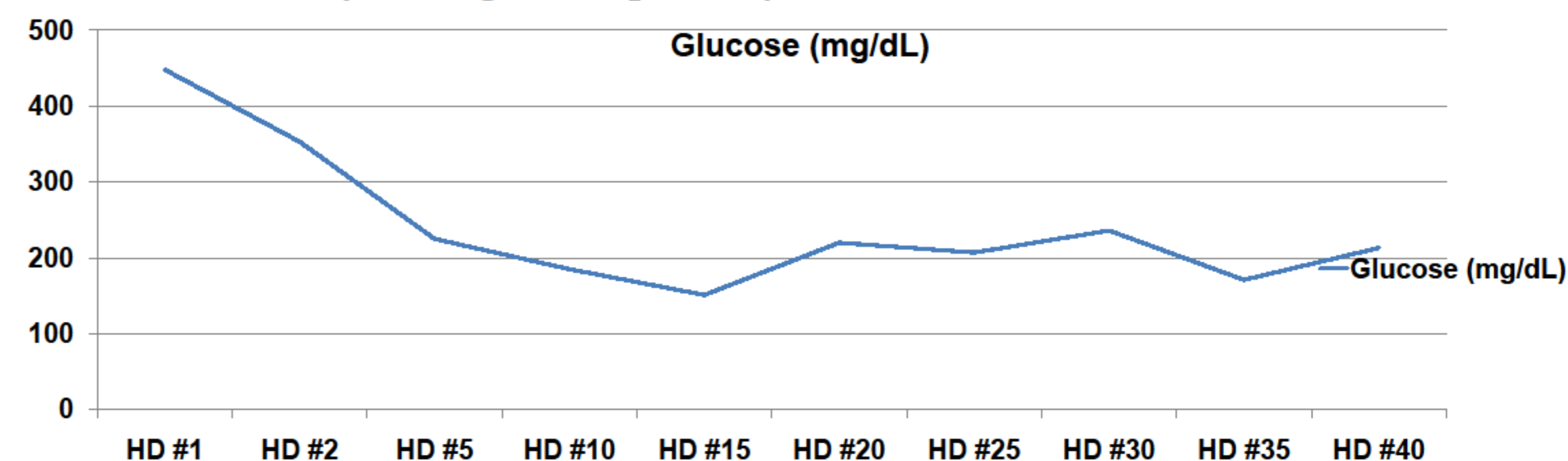


Figure 3. Blood glucose in hospital days.

Conclusion

The case presented here was fatal gas-forming liver abscess in a patient with diabetes. The patient was managed with broad-spectrum antibiotics and percutaneous drainage. The clinical outcome of gas-forming liver abscess in diabetes appears to be fatal, therefore, an early aggressive therapeutic strategies, such as percutaneous drainage or surgical intervention are needed.

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