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Multidrug resistant pyogenic liver abscesses: A rare but fatal complication of a life-saving procedure

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CASE REPORT

An 84-year-old Korean female, nursing home resident, was sent to the emergency department after she was discovered to have an altered mental state, lethargy, and low-grade fever. This patient recently underwent a biliary stent placement secondary to ascending cholangitis. Since then, the patient had multiple uncomplicated recurrent infections. Patient had a past medical history significant for hypertension, dementia, dysphagia, deep vein thrombosis (DVT), and cerebral vascular accident (CVA) with right paresis. Her past surgical history included a G-tube placement, inferior vena cava (IVC) filter placement, right ureteral stent placement, craniotomy, cholecystectomy, ventriculoperitoneal shunt, and left cataract extraction. Patient's vital signs included tachycardia, tachypnea, with a blood pressure of 134/71 mmHg. Patient was slightly febrile, and with a saturation of 95% on room air. On physical examination, patient was toxic appearing, awake, yet drowsy and confused. Additionally, patient grimaced to tenderness over the right upper quadrant and had generalized weakness in all extremities, more pronounced on right side. Furthermore, patient was found to have bilateral harsh breath sounds, basilar crackles, and decrease breath sounds. Her extremities showed trace edema. Laboratory tests revealed hemoglobin 12.4 g/dL, white

blood cell count of $35.7 \times 10^3/\text{mm}^3$, platelets $3.27 \times 10^5/\text{mm}^3$, lactic acidosis, elevated AST, ALT, alkaline phosphatase, and total bilirubin. Additionally, a chest X-ray showed bilateral basilar pneumonia and a small pleural effusion. Based on the laboratory and radiographic findings, patient was admitted to ICU with an assessment of sepsis secondary to pneumonia and to rule out intra-abdominal infection and biliary tract infection. Additionally, patient was started on linezolid and primaxin and a full septic workup was initiated. Computed tomography scan of the abdomen revealed multiple hypodense lesions along the dome/right hepatic lobe with the largest appearing to be multiloculated measuring 6.8x6 cm in the greatest dimension (Figure 1). Hepatic abscesses versus metastatic disease was in consideration. A possible removal of the biliary stents appeared to be technically not feasible because of the patient's hemodynamic instability. A

Figure 1: Computed tomography scan of the abdomen without contrast showing multiple hypodense lesions along the dome/right hepatic lobe with the largest appearing to be multiloculated measuring 6.8x6 cm in the greatest dimension.

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computed tomography scan-guided drainage of large abscesses was then scheduled. Cultures of the abscess drainage showed Enterococcus faecium-Group D, Vancomycin-Resistant (VRE), *Morganella morganii*, and *Pseudomonas aeruginosa*. Patient was then started on tigecycline, amikacin, and linezolid based on sensitivity. However, the patient did not survive and died of septic shock secondary to multidrug resistant pyogenic liver abscess, a complication of biliary stent placement.

DISCUSSION

Pyogenic liver abscesses (PLA) are rare but can be a potentially life-threatening condition [1]. The most common cause in recent data of PLA is biliary disease, which is more prevalent in women. Additional underlying or concomitant causes include but are not limited to: hypertension, intra-abdominal infection, diabetes, malignancy, cardiovascular disease, alcohol abuse and cirrhosis, diverticulitis, and inflammatory disease [2].

Patients with PLA often present to the emergency department with a fever of unknown origin and after a thorough assessment, radiographic studies may be initiated to aid in finding the origin of the fever [3]. Once a PLA is diagnosed, treatment via percutaneous drainage is indicated. Surgery can be an alternative choice. Isolated pathogens of PLA are typically gram-negative bacteria in which *Escherichia coli* was thought to be the most common usually culprit of pyogenic liver abscesses detected by computed tomography, but new data suggest *Klebsiella pneumonia* has become the principal etiology of PLA [2].

CONCLUSION

In our case, the patient developed a multidrug resistant pyogenic liver abscess, which eventually proved to be fatal.

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Waqas Jehangir – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising

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Conflict of Interest

Authors declare no conflict of interest.

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