



A RARE PNEUMOBILIA CASE CAUSED BY LIVER ABSCESS
KARACİĞER APSESİNE BAĞLI NADİR GÖRÜLEN PNÖMÖBİLİ VAKASI

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ABSTRACT

Pneumobilia is the accumulation of gas in the biliary tract. A 72-year-old woman was brought to emergency department with complaints of abdominal pain and general condition. The patient, who described pain in the right lumbar region, had mild distension and right hypochondriac tenderness during the abdominal examination. In contrast-free abdominal tomography, one hypodense lesion was observed at the right and left lobe junction level of the liver. There was an air view in the main bile duct and intra-hepatic bile ducts. The patient was admitted to the general surgery intensive care unit. Liver abscess was found as a result of abdominal imaging and liver fine needle aspiration biopsy performed. After a 2-week intensive care follow-up the patient was discharged with oral antibiotics due to the complete absence of regression and general condition of the patient. Pneumobilia is a rare condition with a high mortality and liver abscess should also be considered among its causes.

ÖZ

Pnömobili safra yollarında gaz birikmesidir. 72 yaşında kadın hasta acil servise karın ağrısı ve genel durum yakınmaları ile başvurdu. Sağ lomber bölgede ağrı tanımlayan hastanın karın muayenesinde hafif distansiyon ve sağ hipokondriyak hassasiyet vardı. Kontrastsız abdominal tomografide karaciğerin sağ ve sol lob birleşim seviyesinde hipodens lezyon gözlemlendi. Ana safra kanalında ve intrahepatik safra kanallarında hava görünümü vardı. Hasta genel cerrahi yoğun bakım ünitesine yatırıldı. Abdominal görüntüleme ve karaciğer ince iğne aspirasyon biyopsisi sonucunda karaciğer apsesi saptandı. İki hafta süren yoğun bakım yatışı ve antibiyotik tedavisi sonrası hasta, regresyonun tamamen sağlanması ve genel durumun iyileşmesi nedeniyle oral antibiyotik tedavisi ile taburcu edildi. Pnömobili, mortalitesi yüksek nadir bir durumdur ve nedenleri arasında karaciğer apsesi de düşünülmelidir.

Keywords: Emergency medicine, liver abscess, pnömobilia.

Anahtar kelimeler: Acil servis, karaciğer apsesi, pnömobili.

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INTRODUCTION

Pneumobilia is the accumulation of gas in the biliary tract. It has many causes and it is important to differentiate them clinically (1). With this case report, it was aimed to present the patient who was admitted to our emergency department with abdominal pain and general condition disorder and diagnosed as pneumobilia.

CASE REPORT

A 72-year-old woman was brought to our emergency department with complaints of abdominal pain and general condition. The patient had a history of cholecystectomy 5 years earlier and hypertension. The general condition in the physical examination was moderate, orientated and cooperative. Vital signs of the patient, arterial blood pressure: 120/65 mmHg, heart rate: 96/min, body temperature: 36.4 degrees and oxygen saturation value was 97%. Electrocardiography (ECG) was 1:1 with av transmission it was a normal sinus rhythm. There was no feature in his respiratory and neurological examination. Nape stiffness was not detected. No acute cerebrovascular event was detected in the central imaging. The patient, who described pain in the right lumbar region, had mild distension and right hypochondriac tenderness during the abdominal examination.

In blood tests, White blood cell (WBC): $11.96 \times 10^3/\mu\text{L}$, Neutrophil: $10.99 \times 10^3/\mu\text{L}$, CRP: 21.5mg/dl, Creatinine: 2.21mg/dl, aspartate aminotransferase (AST): 113 μl , alanine amino transferase (ALT): 103 μl . Amylase, lipase, bilirubin, gamma glutamyl transferase (GGT) values were within the normal ranges. The patient underwent direct radiography and computed tomography (Figure I, Figure II). No gallbladder was detected in abdominal USG (ultrasonography). Choledocal diameter was measured within normal limits. No dilatation was observed in the intrahepatic biliary tract. In contrast-free abdominal tomography taken to investigate the height of creatinine, a 5.5 cm diameter hypodenselesion was observed at the right and left lobe junction level of the liver (Figure II). There was an airview in the main bile duct and intrahepatic bile ducts. The patient who was found to have leukocytosis, C-reactive protein (CRP) elevation and pneumobilia in abdominal Computed Tomography (CT) was admitted to the general surgery intensive care unit. Liver abscess was found at abdominal imaging and liver fine needle aspiration biopsy performed in the patient's intensive care unit. Interventional radiology unit placed a drain catheter in to the abscess under the guidance of ultrasound and a culture sample was taken from the catheter. Owing to the cultivation of *Klebsiella pneumoniae* and *Escherichia coli* bacteria, the empirical antibiotic applied to the patient was stopped and meropenem antibiotics were started. After a 2-week intensive care follow-up, the patient was discharged with oral antibiotics due to the complete absence of regression and general condition of the patient.

DISCUSSION

Pneumobilia is the presence of gas in the biliary tract. Diagnosis of the gas in the biliary tract with ultrasonography (USG) or CT suggests an infection caused by abnormal communication between the intestines and bile ducts or organisms producing gas (2). It can be detected



Figure I: Direct abdominal x-ray view of our patient



Figure II: A hypodenselesion was observed at the junction level

in standing abdominal X-ray, USG, but with CT a characteristic image is obtained (3). It is important to distinguish pneumobilia from portal venous gas, hepatic artery calcification, small biliary sac and biliary tract stones. There are many causes of pneumobilia. Biliary tract interventions, oddi sphincter deficiency, bilio-enteric fistula, and bilio-enteric surgical anastomosis, rarely may be due to infectious causes such as emphysematous cholecystitis, liver abscess, ruptured cyst hydatid, cholangitis and bilio-bronchopleural fistula (1). Pneumobilia caused by blunt abdominal trauma is a rare clinical condition (4).

Although there is no biliary surgery and a recent history of endoscopic retrograde cholangiopancreatography (ERCP) intervention, bouveret syndrome should be considered in the presence of non specific obstruction findings in patients with pneumobilia (5). Bouveret syndrome is defined as the condition in which gallstones passing in to the small intestine due to bilio-enteric fistula cause gastric outlet obstruction (6). In our case, liver abscess was detected as a result of imaging and fine needle aspiration biopsy. Pyogenic abscesses are the most common liver abscess.

The incidence of liver abscesses is 3.6 per 100,000 in the USA. Despite the low incidence of these abscesses, their mortality is as high as 12% (7). In the case reported by Umgelter et al (8), a 87-year-old female patient had a focal hepatic lesion in which they decided to have

an abscess with gas and a gas-filled abscess. As in our case, a drainage catheter was placed in the patient under the guidance of USG. High doses of penicillin and clindamycin started because they suspected anaerobic infection. The patient recovered from pneumobilia attack but died from ischemic stroke 4 weeks later (8). Soft tissue infection, caused by *Clostridium* species, which causes air to be detected in the organism, generally follows a fatal course. Treatment of clostridial soft-tissue infection is based on rapid debridement and emergency antibiotic therapy. Since antibiotic treatment and drainage are required in a timely manner to prevent mortality in patients, it is important to identify the underlying cause (9). Pneumonia is a rare condition with a high mortality and there asonfor this must be investigated. Although pneumobilia secondary to infection is rare, it should be considered (1). We aimed to remind that liver abscess should be considered as a reason of that pneumobilia is rarely seen with this case report but has high mortality and requires urgent treatment.

REFERENCES

1. Jin TY, Gaillard F, Pneumobilia. <https://radiopaedia.org/articles/pneumobilia>; Access Date: 08.10.2020.
2. Sherman SC, Tran H. Pneumobilia: benignor life-threatening. *J Emerg Med* 2006; 30:147-153.
3. Fourneau H, Grandjean C. Pneumobilia caused by blunt abdominal trauma. *J Belg Soc Radiol* 2019; 103:1.
4. Ladurner R, Kotsianos D, Mutschler W et al. Traumatic pneumobilia after cardiopulmonary resuscitation. *Eur J Med Res* 2005; 10:495-497.
5. Keller M, Epp C, Meyenberger C et al. Unspecific abdominal symptoms and pneumobilia: a rare case of gastrointestinal obstruction. *Case Rep Gastroenterol* 2014; 8:216-220.
6. Koulaouzidis A, Moschos J. Bouveret's syndrome. Narrative review. *Ann Hepatol* 2007; 6:89-91.
7. Gonzaga ER, Bashir K, Bhatti H et al. Liverabscesses as a complication of side-to-side choledochoduodenostomy: 1283. *Am J Gastroenterol* 2019;114:712-713.
8. Umgelter A, Wagner K, Gaa J et al. Pneumobiliacaused by a clostridial liver abscess rapid diagnosis by bedside sonography in the intensive care unit. *J Ultrasound Med* 2007; 26:1267-1269.
9. Hart GB, Lamb RC, Strauss MB. Gasgangrene. *J Trauma* 1983; 23:991-1000.