Liver abscess and tracheal fistula induced by transcatheter arterial chemoembolization for hepatocellular carcinoma: A case report

Zhang FL et al. TACE for HCC induced tracheal fistula

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Abstract

BACKGROUND

Transarterial chemoembolization (TACE) is a standard treatment for intermediate-stage hepatocellular carcinoma (HCC). The complications of TACE include infection of biliary tract, damage of liver function, tumor lysis syndrome, biloma, partial intestinal obstruction, cerebral lipiodol embolism et al. There was few report about the tracheal fistula was induced by TACE.

CASE SUMMARY

A 42 years male came to our hospital with cough and expectoration for one month after TACE for HCC. The laboratory result showed albumin (ALB), hemoglobin (Hb), prothrombin time (PT), C-reactive protein (CRP), dimer and abnormal prothrombin (ABP) were not in normal. The culture of phlegm and liver pus both contained citrobacter flavescens. Computed tomography (CT) showed that inferior lobe of right lung was infected, and low density lesion with gas was in the right liver. The liver ultrasound scan showed there was a big liquid hypoechoic and without blood flow signal. Drainage for liver abscess by needle puncture under ultrasonic guiding was
performed. After the drainage and anti-infection for one month, the abscess in liver and infection in lung were reduced obviously, and the symptom of expectoration were relieved.

CONCLUSION
We should be alert to the complication of liver abscess and tracheal fistula after TACE for HCC. Drainage for liver abscess by needle puncture under ultrasonic guiding could relieve the liver abscess and tracheal fistula.

Key Words: tracheal fistula; liver abscess; transcatheater arterial chemoembolization; hepatocellular carcinoma; drainage


Core Tip: Hepatocellular carcinoma (HCC) ranks as the world's fifth most prevalent cancer and the third leading cause of cancer-related deaths. Transarterial chemoembolization (TACE) is commonly used for treating intermediate-stage hepatocellular carcinoma. The adverse effects of TACE included liver rupture, liver abscess, femoral artery pseudoaneurysm, cholecystitis, biloma, pulmonary embolism, cerebral lipiodol embolism, tumor lysis syndrome, partial intestinal obstruction, and gallbladder perforation. TACE was known to cause a small number of tracheal fistula cases.

INTRODUCTION
Hepatocellular carcinoma (HCC) ranks as the world's fifth most prevalent cancer and the third leading cause of cancer-related deaths. Transarterial chemoembolization (TACE) is commonly used for treating intermediate-stage hepatocellular carcinoma.
The adverse effects of TACE included liver rupture, liver abscess, femoral artery pseudoaneurysm, cholecystitis, biloma, pulmonary embolism, cerebral lipiodol embolism, tumor lysis syndrome, partial intestinal obstruction, and gallbladder perforation. TACE was known to cause few patient with the tracheal fistula.

CASE PRESENTATION

Chief complaints
Exhibiting symptoms of cough and expectoration for a month.

History of present illness
The patient did not have any previous pulmonary diseases such as coughing.

History of past illness
TACE was performed for HCC one month ago. Two years earlier, he suffered from hepatitis B liver cirrhosis and was administered entecavir orally daily for antiviral treatment.

Personal and family history
He possessed no record of high blood pressure, diabetes, or heart disease. Her family's medical history was free from any cancerous conditions.

Physical examination
Clinical assessment revealed a diseased liver, absence of skin or sclera discoloration, clear respiratory sounds during auscultation of both lungs, no signs of dry or wet rales, a heart rate of 76 beats per minute, consistent heart rhythm, a soft abdomen, absence of tenderness or rebound pain, accessible 1 cm beneath the ribs of the right clavicular line of the liver and spleen, and no swelling in either lower extremity.

Laboratory examinations
The stool and urine tests showed standard results. The laboratory result of blood showed white blood cell (WBC), platelet, prothrombin time (PT), total bilirubin (TB), alanine aminotransferase (ALT), creatinine (Cr), alpha-fetoprotein (AFP), carcinoembryonic antigen (CEA), Carbohydrate antigen 199 (CA199), triglyceride, cholesterol, amylase, lipase and glucose were in normal range. (Table 1) Albumin (ALB), hemoglobin (Hb), C-reactive protein (CRP), abnormal prothrombin (ABP) and dimer were not in normal. (Table 1) Hepatitis B surface antigen (HbsAg) was positive. Hepatitis C antibody (HC Ab), human immunodeficiency virus antibody (HIV Ab), syphilis antibody (Sp Ab), anti-nuclear anti-bodies (ANA) were all negative.

**Imaging examinations**

The culture of phlegm and liver pus both contained citrobacter flavescens. Computed tomography (CT) showed that inferior lobe of right lung was infected (Figure 1), and low density lesion with gas was in the right liver (Figure 2). The liver ultrasound scan showed there was a big liquid hypoechoic (Figure 3) and without blood flow signal (Figure 4). Drainage for liver abscess by needle puncture under ultrasonic guiding was performed (Figure 5). After the drainage and systemic antibiotics for one month, the abscess in liver (Figure 6) and infection in lung (Figure 7) were reduced obviously, and the symptom of expectoration were relieved.

**FINAL DIAGNOSIS**

liver abscess and tracheal fistula

**TREATMENT**

The drainage and systemic antibiotics were performed for one month.

**OUTCOME AND FOLLOW-UP**

The abscess in liver (Figure 6) and infection in lung (Figure 7) were reduced obviously, and the symptom of expectoration were relieved.
DISCUSSION

Multiple complications have been linked to TACE, such as postembolization syndrome, liver failure, liver infarction, liver abscess, biliary necrosis, cholecystitis, skin injuries, and adrenal bleeding\[^{4,5,6}\]. Within this group, a liver abscess is known to lead to considerable illness, extended hospital stays, and a high risk of death\[^{7,8}\]. The occurrence of liver abscesses following liver chemoembolization is uncommon, yet it has been documented in earlier research. Reed and colleagues\[^{9}\] documented that out of 227 patients, 6 (2.6\%) developed liver abscesses post-chemoembolization. Liver abscesses have the potential to burst into the gastrointestinal, pericardial, and peritoneal spaces\[^{10,11,12}\]; yet, the occurrence of fistulization in the trachea is uncommon, with only a handful of hepatogastric fistula cases documented\[^{13,14}\]. The combination of percutaneous catheter drainage and systemic antibiotics stands as the predominant method for treating hepatic abscesses\[^{15,16}\].

In this case, after the drainage and systemic antibiotics for one month, the abscess in liver and infection in lung were reduced obviously, and the symptom of expectoration were relieved. The reason of the abscess and tracheal fistula induced by TACE may be as follow: ① Necrosis and liquefaction of the tumor were occured after TACE. ② The normal cells of liver were injured and accompanied with inflammatory exudation. ③ The location of TACE was near the diaphragm, and the chemoembolization may injure the diaphragm. ④ The abscess may gradually invaded the diaphragm and trachea.

CONCLUSION

We should be alert to the complication of abscess and tracheal fistula after TACE for HCC. Drainage for liver abscess by needle puncture under ultrasonic guiding could relieve the liver abscess and tracheal fistula.


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