Long-term survival for 11.5 years after percutaneous transhepatic cholangioscopic microwave tissue coagulation (MTC) in a jaundiced man with bile duct carcinoma and Schnitzler's metastasis due to colon carcinoma


Abstract

We previously reported an inoperable jaundiced woman and man with bile duct carcinoma who underwent cholangioscopic MTC and survived longer than 13 and 15 years, respectively. Here, we report another jaundiced patient with bile duct carcinoma with survival longer than 10 years after cholangioscopic and X-ray image-guided MTC.

A 56-year-old man was referred to our institution because of right hypochondric pain and constipation with suspected postoperative intestinal stenosis. Three years previously, he had undergone a non-curative resection of carcinoma in the transverse colon, in which both the second group of regional lymph nodes and pelvic tumor were histologically metastatic (Schnitzler's metastasis).

Besides abdominal pain, he had biliary jaundice, increased serum bilirubin and amylase, and leukocytosis. Percutaneous transhepatic cholangial drainage (PTCD) was performed for biliary decompression with improvement of jaundice, followed by fluorographically complete obstruction of the common bile duct (CBD) suggestive of a neoplastic lesion. Percutaneous transhepatic cholangioscopy (PTCS) revealed a papillary tumor in the terminal portion of the CBD, with a histological diagnosis of papillary adenocarcinoma.

Given his previous non-curative resection of colon cancer, he did not wish to undergo pancreatoduodenectomy (PD) as radical surgery. Therefore, cholangioscopic and X-ray image-guided MTC using Microtaze® (Heiwa Electronic Industrial Co. Ltd., Osaka Japan), a 1.8 mm spherical antenna, and a 5 mm bullet-shaped antenna covering a thin guide wire (0.028 inch, Cook Co. Ltd., USA) was carried out under radiation of 45 watts and repetitions of 3~5 seconds in duration.

The patient lived for 11.5 years after the onset of pain and jaundice.

For malignant neoplasms in the early stage of progression in the bile duct, cholangioscopic methods including MTC may be a treatment option aimed at cure, as are bronchoscopic methods for lung cancer in the early stage of progression.

Key words: bile duct carcinoma, long survival, MTC (Microwave Tissue Coagulation), non-surgical

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Introduction

Following examination of the experimental and clinical aspects of cholangioscopic treatment related to microwave tissue coagulation (MTC) of bile duct carcinoma, especially hepatic hilar cholangiocarcinoma, we previously reported long-surviving female and male patients with inoperable bile duct carcinoma treated by MTC.

We report here another jaundiced patient with bile duct carcinoma with survival longer than 10 years after cholangioscopic and X-ray image-guided MTC.

Case

A 56-year old male was referred to our institution because of right hypochondric pain and constipation with suspected postoperative intestinal stenosis. Three years previously, he had undergone a non-curative resection of carcinoma in the transverse colon, in which both the second group of regional lymph nodes and pelvic tumor were histologically metastatic (Schnitzler’s metastasis).

Besides abdominal pain, he had bulbar jaundice, increased serum bilirubin and amylase, and leucocytosis (TB 2.8 mg/dl, S-amyl 716 /IU, WBC 10,600 /mm³). Plain abdominal X-ray and ultrasound studies revealed a swollen gallbladder and a dilated extrahepatic bile duct in which strong echo (SE) without acoustic shadow (AS) was detected.

Percutaneous transhepatic cholangial drainage (PTCD) was performed for biliary decompression with improvement of jaundice, followed by fluorographically complete obstruction of the common bile duct (CBD) suggestive of a neoplastic lesion.

Employing step-wise enlargement of the PTCD sinus tract, percutaneous transhepatic cholangioscopy (PTCS) revealed a papillary tumor exhibiting slight erythema and sea anemone-like movement in the CBD terminal portion, with a histological diagnosis of papillary adenocarcinoma.

Given his previous non-curative resection of colon cancer, he did not want to undergo pancreatoduodenectomy (PD) as radical surgery.

Therefore, cholangioscopic MTC using Microtaze (Heiwa Electronic Industrial Co. Ltd., Osaka Japan) and a 1.8 mm ϕ spherical antenna was carried out under radiation of 45 watts and repetitions of 3~5 seconds in duration (Fig. 2). Furthermore, X-ray image-guided MTC using a 5 mm ϕ bullet-shaped antenna covering a thin guide wire (0.028 inch, Cook Co. Ltd., USA) was carried out under the same conditions of radiation and repetition in the CBD terminal and preampullary portions, where cholangioscopic maneuvers could not be performed due to the narrowness of these structures. Duodenjejunoscopy (JF) observation with the 5 mm ϕ bullet-shaped antenna-head protruding through the preampullary portion (Papilla of Vater) was useful for preventing duodenal injury (so called Rendezvous procedure, Fig. 3).

After complete re-canalization of the CBD, an indwelling tube for serial cholangioscopic examination was left in the PTCS sinus tract, aiming at early detection of recurrence of cancer (Fig. 4). Three months later, the indwelling tube was removed without findings of recurrence, followed by administration of an oral anticancerous chemotherapeutic agent (Uracil-Tegafur: UFT-E, 400mg/d) for 6 years, until an accidental fall from a building resulted in paresis of all of his extremities and brain abscess, the origin of which was un-
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He subsequently suffered from mutism and poor appetite with malnutrition, and was diagnosed with dementia, which progressed.

Four years later, he was referred again to our institution because of jaundice and liver function changes (increased serum Al-P, γ-GT, and total and direct bilirubin) with advanced akinesis, mutism, loss of appetite, and urinary incontinence.

Computed tomography (CT) revealed no hepatic metastasis but slight increase in size of Schnitzler’s tumor (Fig. 5). Percutaneous transhepatic cholangioscopy (PTCS) revealed cholelithiasis and a new tumorous lesion in the CBD terminal portion, the histological diagnosis of which was papillary adenocarcinoma. The cancerous lesion and 2 calcium bilirubinate stones were successfully treated cholangioscopically again (PTCS-MTC and lithotomy), without complications, followed by smooth biliary flow through the CBD into the duodenum (Fig. 6).

Nevertheless, one and one-half years later (11.5 years from the initial MTC), he died of advanced dementia with cerebral infarction. No adverse side effects of MTC were noted.
Discussion

Bile duct carcinoma is one of the most lethal and aggressive malignancies, with the majority of patients harboring unresectable tumors at presentation. The current conventional treatment for bile duct carcinoma is either bile duct resection with hepatectomy or pancreatoduodenectomy (PD) based on its location, according to the guidelines for diagnosis and treatment of bile duct carcinoma⁴.

However, hepatectomy and /or PD is a major operation not well tolerated by jaundiced and aged patients in poor general condition with bile duct carcinoma. Even if patients tolerate it, they cannot in general expect to survive more than several years. However, because it is the only standard radical operation for bile duct carcinoma, hepatectomy and /or PD is actively used in the treatment of bile duct carcinoma by common consensus, even in the early stage of progression.
The current increase in population of aged patients with cancer is remarkable, and they have come to prefer minimally or less invasive treatments rather than conventional surgeries because of their intolerance of surgical procedures. Local, non-surgical endoscopic treatments for malignant gastrointestinal tract neoplasms in the early stage of progression have made great progress.

For bile duct neoplasms, however, treatments such as endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) have not been chosen since sufficient specimens cannot be obtained non-surgically due to anatomical problems (narrow, anatomically complex regions). The procedures for approach employed (PTCS and endoscopic retrograde cholangiography, ERC) are also reasons for not selecting EMR and ESD as treatment options for bile duct neoplasia.

Bile duct resection (BDR) is the only surgical operation less invasive than hepatectomy and/or PD for bile duct neoplasms in the early stage of progression. The applicability of BDR to bile duct neoplasms is limited in the middle portion of the extrahepatic duct (Bm), and this procedure can only be performed when several surgical and pathological indications are met. Moreover BDR is itself a surgical treatment with the likelihood of major complications.

Nevertheless, non-surgical, that is, endoscopic treatment of bile duct carcinoma in the early stage of progression has, as stated above, not been chosen as a treatment option aimed at cure. However, bronchoscopic treatment (for example, photodynamic therapy, PDT) is a treatment option for bronchogenic lung cancer in the early stage of progression.

For malignant neoplasms in the early stage of progression of the bile duct, the anatomically complex components of which are similar to those of the bronchus, cholangioscopic methods including MTC may be a treatment option, as are...
bronchoscopic methods for lung cancer in the early stage of progression.

Furthermore, in the future, intracanalicular radiofrequency (RF) treatment with MTC in patients with bile duct neoplasms may be associated with a reduced risk of disease progression 6).

Together with previous reports 2-3), this report may contribute to the application of cholangioscopic treatment to bile duct malignant neoplasms in the early stage of progression of aged patients in poor condition.

References