Necrotizing pancreatitis after transcatheter arterial chemoembolization for hepatocellular carcinoma

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Common postprocedural complications after transcatheter arterial chemoembolization (TACE) are the postembolization syndrome (fever, abdominal pain, nausea, vomiting) and transient impairment of liver and kidney functions (1–3). Rarely, ischemic damage in extrahepatic organs (gastrointestinal tract ulceration, acute cholecystitis, acute pancreatitis, and necrosis of epigastric skin) may occur (4–6). The proposed mechanism of this complication is inadvertent embolization through collateral vessels or regurgitation of chemotherapeutic agents to the arteries of other organs (1, 7, 8). If TACE is performed via the proper hepatic artery without direct catheterization of the tumor feeder vessels (i.e., nonselective), hyperamylasemia is detected in about 40% of patients (9). Clinically evident acute pancreatitis occurs at an incidence between 1.7% to 4% (4, 9, 10). The published data on necrotizing pancreatitis is limited to case reports (9). Here, we report a case of necrotizing pancreatitis after TACE for hepatocellular carcinoma (HCC).

Case report
A 55-year-old man, who had been followed for chronic hepatitis B infection for 10 years, presented with multiple masses in the right lobe of the liver and a metastasis in the left adrenal gland. He was referred after a percutaneous liver biopsy which revealed a moderately differentiated HCC. He was treated by TACE. At the third session of TACE, the right hepatic artery was found to be thrombosed; however, angiography also demonstrated collateral feeder vessels (arising from the pancreaticoduodenal artery) which were used for treatment. He developed necrotizing pancreatitis, possibly due to regurgitation of the chemotherapeutic agents to the pancreas. He recovered without complications with imipenem-cilastatin prophylaxis. Acute pancreatitis is a rare but severe complication of TACE. Selective catheterization of the tumor vessels is the established standard in TACE. A careful risk-benefit analysis is mandatory in patients with abnormal collateral vessels. Treatment of acute necrotizing pancreatitis (ANP) after TACE is the same as the accepted approach to ANP due to other causes.

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regurgitation of embolic and chemotherapeutic agents into the pancreatic arteries. This mechanism is similar to the “ischemic” acute pancreatitis models, in which microspheres are injected into the pancreatic arteries (11–14).

Pancreatidis of varying severity occurs as a complication of TACE. Since it may clinically mimic postembolization syndrome, serum pancreatic enzyme levels should be tested systematically for abdominal pain following chemoembolization. Acute pancreatitis should be kept in mind even when TACE has been performed safely (5). Ischemia is important in the development of acute pancreatitis (15). This complication is unusual after selective arterial embolization (16, 17). To prevent this complication, the catheter tip should be placed as close to the distal branches of hepatic artery as possible (5), although a highly selective procedure may not be possible in all patients.

The treatment of necrotizing pancreatitis induced by chemoembolization for treatment of HCC is conservative, as is necrotizing pancreatitis from other causes. Prophylactic antibiotics (e.g., imipenem) reduce the incidence of pancreatic infection in patients.
with severe acute pancreatitis with pancreatic necrosis (18). In our case, we chose conservative treatment, and the patient was discharged from the hospital without need for surgical intervention.

In conclusion, acute necrotizing pancreatitis after TACE is not commonly seen, but the awareness of this complication and routine monitoring of serum pancreatic enzymes is important in the early detection and treatment of acute postprocedural pancreatitis.

References


Figure 4. a, b. Contrast-enhanced CT images (a, b) show partially resolved necrosis at the head and neck of the pancreas.