Cholangioscopic appearance after radiofrequency ablation of cholangiocarcinoma

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An estimated 39,000 cases of cholangiocarcinoma (CC) were diagnosed in the United States in 2016.[1] Of the patients with diagnoses of CC, two-thirds are unable to undergo surgical resection and require locoregional therapy.[2,3] Given the ever-rising prevalence of this condition and the intimate involvement of the advanced endoscopist in the care of these patients, intraductal therapies have arisen, which may serve an important role in the care of CC.

One such technology is an intraductal radiofrequency ablation (RFA) device, which uses an 8F, 180-cm wire-guided catheter with 2 stainless steel electrodes covering 25 mm of the treatment site (Fig. 1). This technology allows for the delivery of RF energy within the biliary tree for the treatment of CC.

An 81-year-old man with unresectable CC (due to multilobar disease), who had undergone 1 cycle of chemotherapy, presented for ERCP with stent exchange. His medical history included chronic obstructive pulmonary disease and coronary artery disease. His initial liver function values were minimally elevated, with an aspartate aminotransferase of 56 U/L, alanine aminotransferase of 62 U/L, total bilirubin of 2.1 mg/dL, and alkaline phosphatase of 286 U/L.

The patient received a diagnosis of a 4.4 × 5.9 cm hyperintense mass with central enhancement, and a pronounced peripheral rim in the caudate lobe and mass in the left hepatic duct (Fig. 2).

An ERCP demonstrated a prominent biliary tumor in the left main hepatic duct. Biopsy of the tumor was performed with intraductal forceps (Fig. 3). Additionally, during this procedure the patient underwent placement of a plastic biliary stent during the wait for the diagnosis (Fig. 4). Examination of these biopsy specimens later confirmed the diagnosis of CC.

The patient was seen by medical and surgical oncologists during a multidisciplinary tumor board, and the plan was to give chemotherapy with concomitant locoregional therapy, using intraductal RFA to allow for maximal palliative effect and prolong the interval for stent exchange.

During chemotherapy, the patient returned for ERCP, for which a 10F × 15 cm plastic stent was placed.

After the completion of 1 cycle of chemotherapy, CT was then performed for staging purpose and revealed an interval increased enhancement of the left biliary ductal segment and a 2.7 × 2.6 caudate lobe liver lesion (Fig. 5). This interval decrease in tumor size was likely due to the systemic effects of his chemotherapy.

The patient returned for ERCP with locoregional RFA after his imaging results were obtained (Video 1, available online at www.VideoGIE.org). After stent removal, wire-guided cannulation was performed with a standard bowing sphincterotome and a 0.035 × 260 cm wire. A cholangiogram then demonstrated persistent stenosis of the left hepatic duct. The duct was swept in an attempt to clear

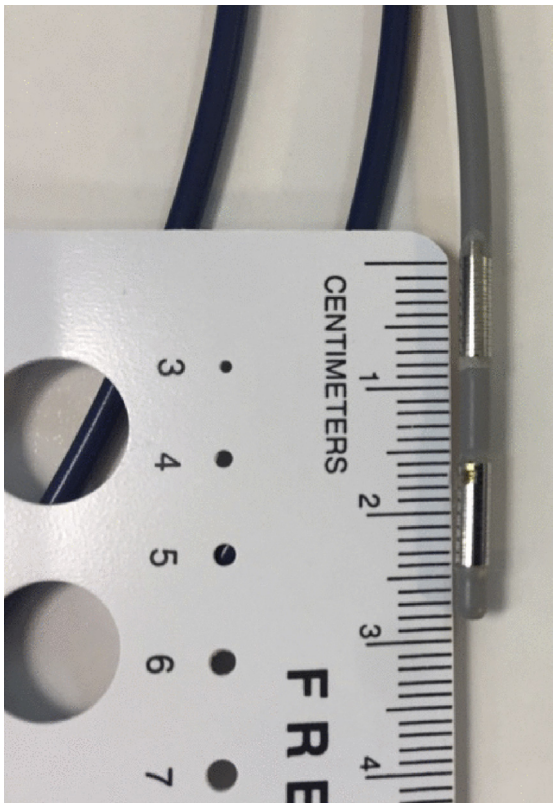

Figure 1. To-scale view of intraductal radiofrequency ablation device showing an 8F, 180-cm, wire-guided catheter with 2 stainless steel electrodes covering 25 mm of intraductal space.

Written transcript of the video audio is available online at www.VideoGIE.org.

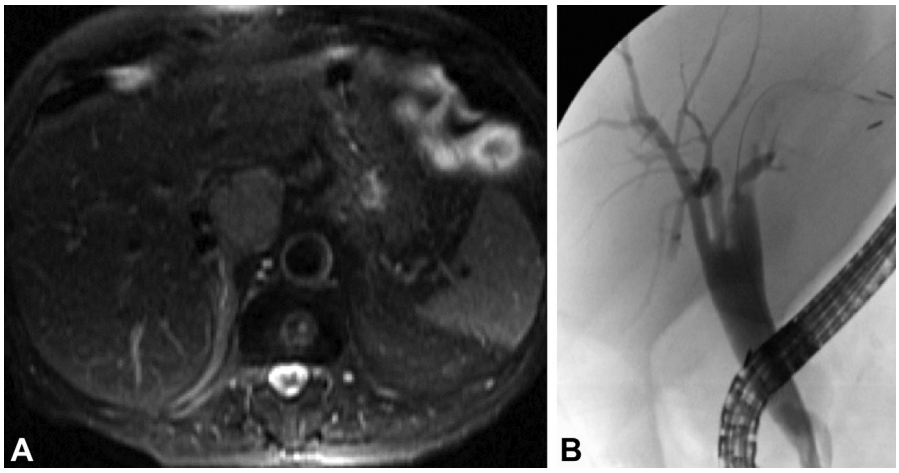

Figure 2. A, MRI view before RFA showing 4.4 × 4.2 × 5.9 cm hyperintense mass with central enhancement and pronounced peripheral rim in the caudate lobe and mass in left hepatic duct. **B,** Cholangiographic view before RFA showing left hepatic ductal stenosis. *RFA*, radiofrequency ablation.

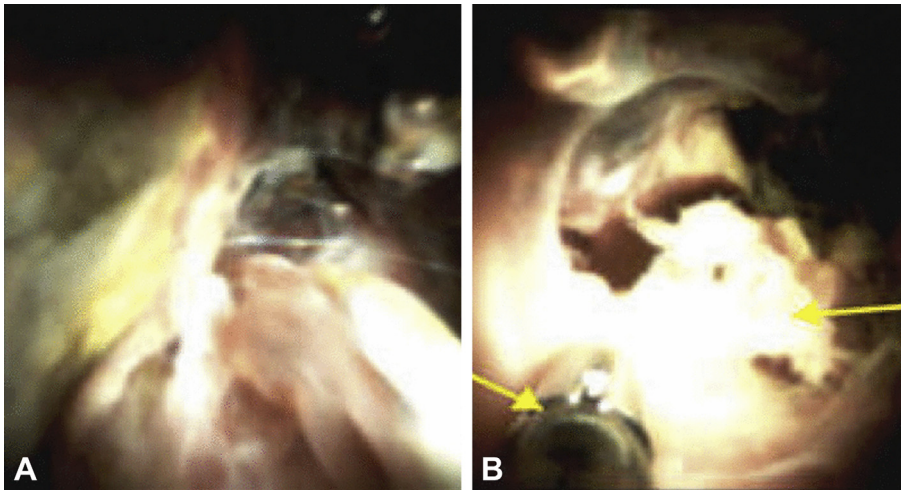

Figure 3. Cholangioscopic views before radiofrequency ablation showing **A,** a prominent biliary tumor in the left main hepatic duct, and **B,** biopsy of tumor with intraductal forceps.

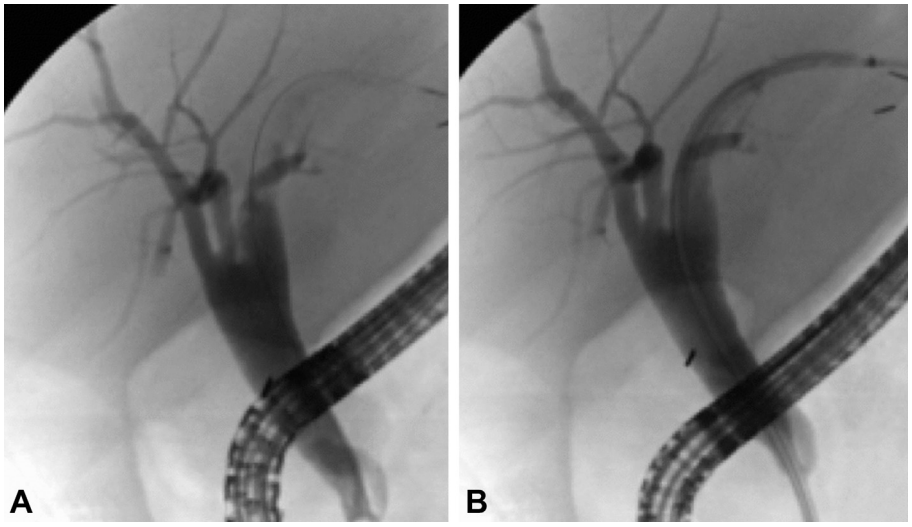

Figure 4. Cholangiographic views during chemotherapy showing **A,** persistent left hepatic ductal stenosis and **B,** plastic stent replaced into left hepatic ductal system.