

# Chemoembolization for Extrahepatic Arteries Feeding HCC

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Today, the standard endovascular treatment of hepatocellular carcinoma (HCC) is transcatheter arterial chemoembolization (TACE) with calibrated particles preloaded with doxorubicin. This is a more selective and challenging technique compared to classical chemoembolization with ethiodized oil, especially concerning the use of microcatheters. New-generation microcatheters are developed to go further distally in more tortuous and smaller arteries and thus achieve more favorable results.

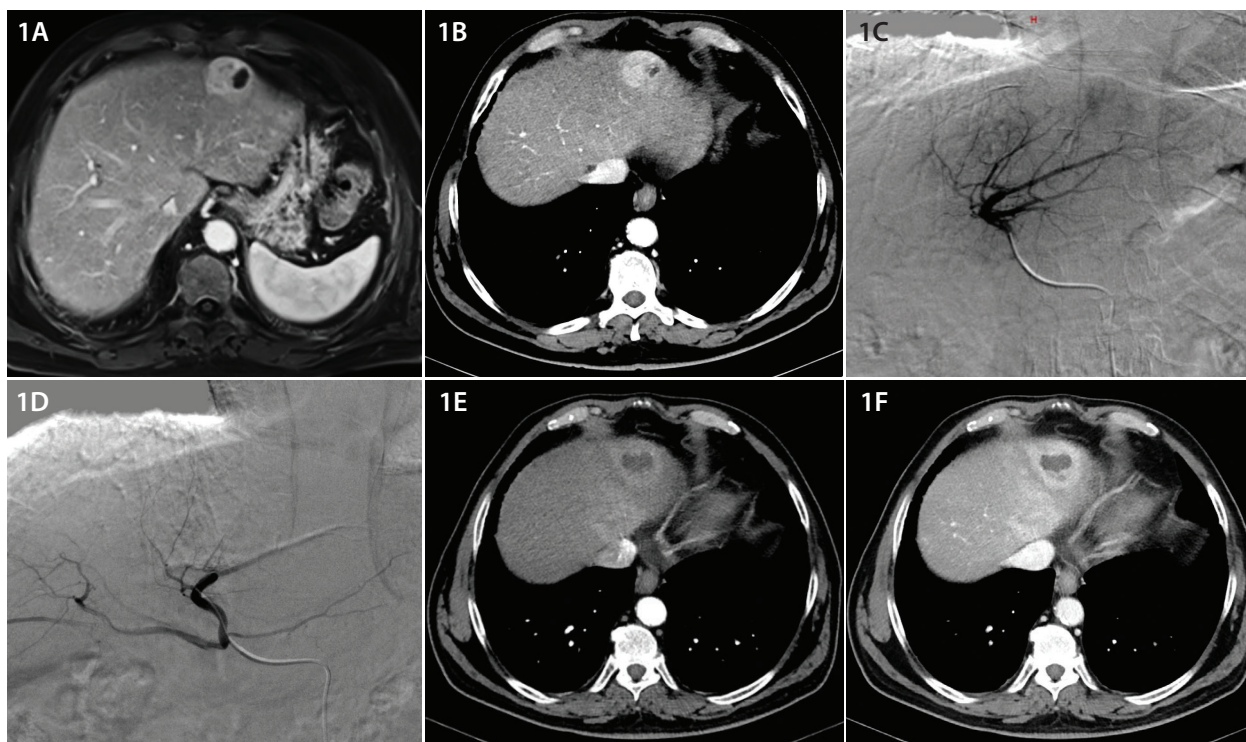
In this sense, HCC with extrahepatic feeding arteries represents a more challenging condition for its treatment, and it is present in a nonnegligible proportion of cases. Although a conventional 2.7-F (0.9-mm) micro-

catheter usually reaches its goal in most procedures, the use of new-generation microcatheters in these particular cases is mandatory to achieve successful treatment of these lesions.

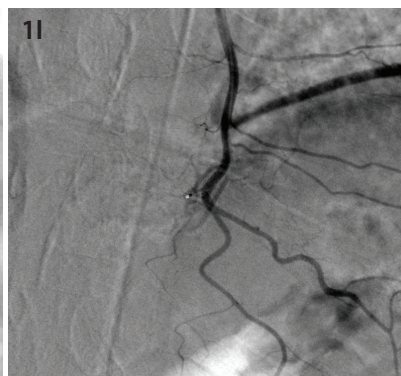
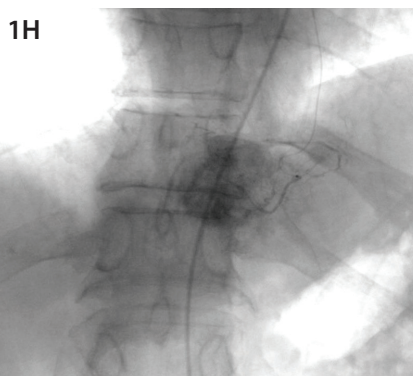
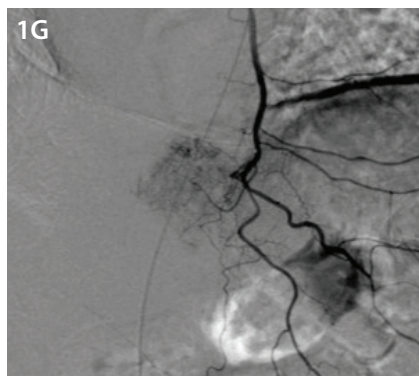
This article presents our recent experience with the new 2.4-F, 150-cm- (0.8-mm, 1,500-mm-) long Direxion™ Torqueable Microcatheter with a distal radiopaque marker.

## CASE PRESENTATION

A 59-year-old man presented with a medical history of stable ischemic heart disease. He had no known liver disease. An abdominal MRI was performed (Figure 1A) and showed an incidental liver lesion of 3.8 cm (38 mm)



Results from case studies are not necessarily predictive of results in other cases. Results in other cases may vary.



in segment 2 with typical characteristics of HCC.

The final diagnosis was nonalcoholic steatohepatitis cirrhosis in a patient with Barcelona Clinic Liver Cancer early-stage A, Child-Pugh A, candidate to orthotopic liver transplant. Treatment with drug-eluting bead chemoembolization was decided as a bridge to liver transplant.

After MRI diagnosis and before treatment, a dynamic angio-CT scan (Figure 1B) was also obtained, which showed the described lesion with arterial enhancement.

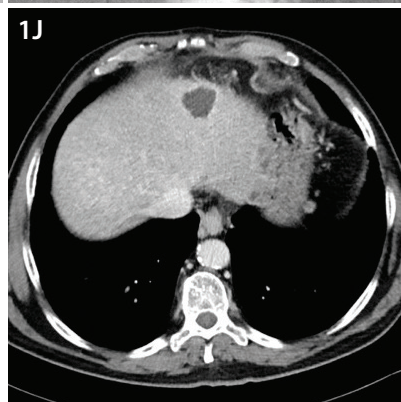
Through a right femoral access, a celiac trunk arteriogram showed a mild enhancement in the area of segment 2 (Figure 1C). Treatment with doxorubicin-loaded, 100–300- $\mu$ m beads was administered. No additional tumoral branch or suspicious foci of enhancement was detected (Figure 1D).

Dynamic angio-CT scans performed 1 month later with arterial and venous phase (Figures 1E and 1F), showed partial response of the nodule, but no additional information about the pathway of new feeding arteries.

A second TACE was planned. Angiography focused on extrahepatic vessels showed a left mam-

mary artery feeding the remaining viable tumor (Figure 1G). Using a 2.4-F, 150-cm (0.8-mm, 1,500-mm) Direxion™ Torqueable Microcatheter, superselective catheterization of the final tumoral branch was accomplished (Figure 1H). Superficiality of the parietal branches of the mammary artery discouraged us from performing a nonsuperselective embolization with doxorubicin. The final run showed a lack of enhancement of the lesion (Figure 1I). No complications, such as pain or ulcerations, were seen.

Control with angio-CT scan showed a complete response of the lesion in segment 2 (Figure 1J).



## DISCUSSION

Although the majority of selective chemoembolization can be accomplished with standard 2.7-F (0.9-mm) microcatheters, suspicion of extrahepatic feeding arteries with HCC or inability to accomplish a superselective catheterization makes it crucial to use more efficient microcatheters. The use of these more technically developed microcatheters, designed with a lower-caliber profile and more torqueability and pushability, permits not only the injection of

particles up to 300  $\mu$ m, but also good trackability through tortuous routes. In our initial experience using the Direxion™ Microcatheter, we succeeded in completing the treatment of all of our cases. ■

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