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CASE REPORT

Coiling a Hepatic Bleed With Direxion™ Microcatheters and IDC™ Soft Microcoils

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A 34-year-old man presented to the emergency department after a motorized scooter accident. CT scan demonstrated grade 4 liver laceration with areas of active extravasation (Figure 1), grade 5 right renal injury, and right adrenal hemorrhage. The patient was initially in a stable clinical condition but was taken to the operating room after decompensating. The interventional radiology department was urgently consulted during surgery, as the trauma team could not adequately control the hepatic bleeding. The patient presented with dropping systolic pressures despite transfusions.

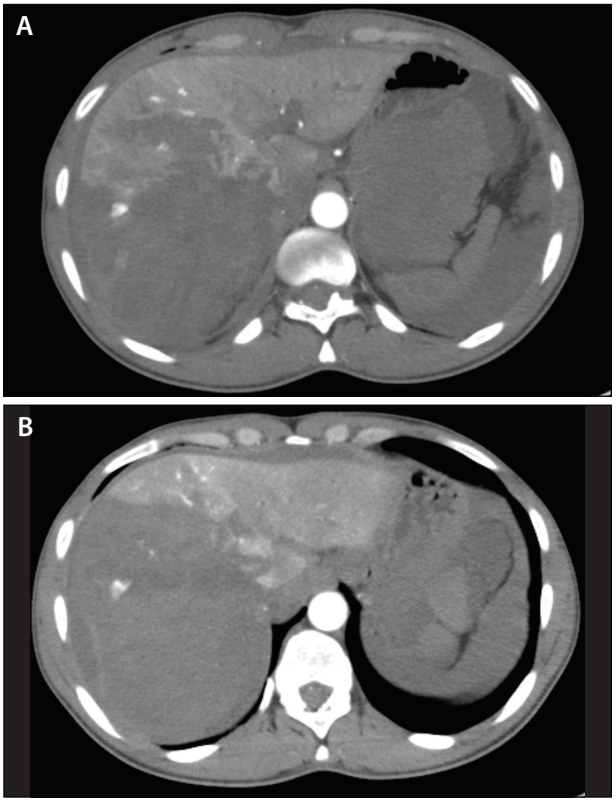

Figure 1. Two slices of the initial CT scan before the intervention demonstrating a liver laceration.

PROCEDURE DESCRIPTION

Once the patient was transferred to interventional radiology, a diagnostic catheter was placed into the aorta and selected out of the celiac artery. Multiple angiograms were obtained without visualizing the bleed. Celiac runs initially only showed a replaced left hepatic artery. The proper hepatic artery had a surgical tie (Pringle maneuver) around it, preventing visualization of the right hepatic vasculature (Figure 2). Attempts were made to cross the proper hepatic artery with numerous microwires, but these attempts were unsuccessful. The microwire in use was exchanged for a 180-cm Straight Fathom®-16 Guidewire (Boston Scientific Corporation) to cross the Pringle and advance the 130-cm Straight Direxion HI-FLO™ Microcatheter (Boston Scientific Corporation) into the right hepatic artery.

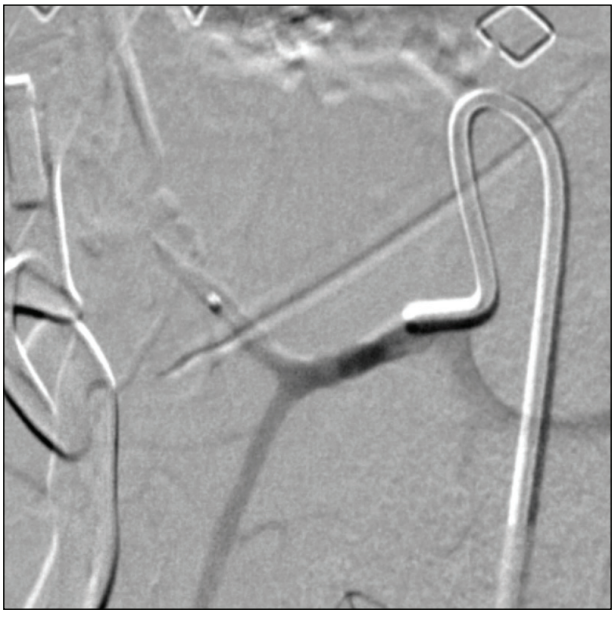

Figure 2. Angiogram showing the Pringle at the level of the proper hepatic artery, which prevented visualization of the right hepatic artery.

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

Figure 3. Angiogram of the right hepatic artery demonstrating active extravasation.

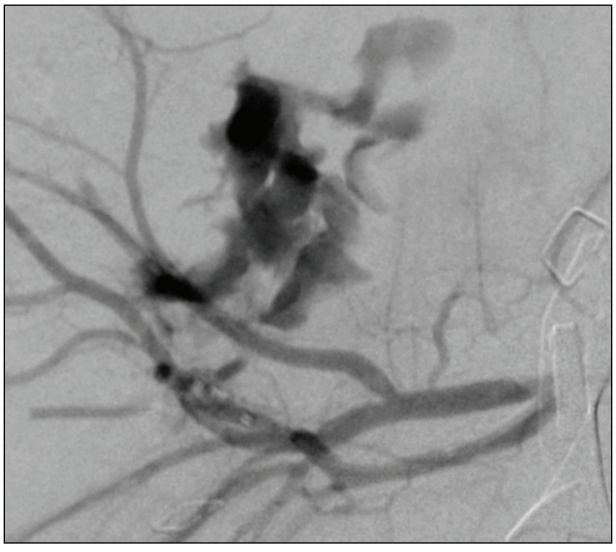

Figure 4. Angiogram of the selective inferior branch showing profuse extravasation.

A right hepatic angiogram demonstrated active extravasation. The microcatheter and wire were advanced into one of the right segmental branches and a repeat angiogram was obtained. The bleed was not seen off of that particular vessel but seemed to be coming from another inferior branch that had a more proximal takeoff from the right hepatic artery (Figure 3). The catheter and wire were pulled back, but despite multiple attempts, access of the inferior branch was unsuccessful.

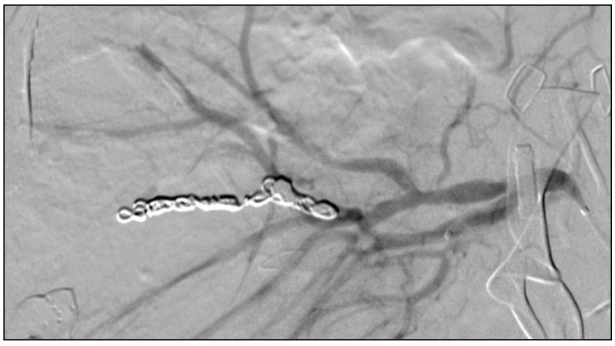

Figure 5. Angiogram of the right hepatic artery demonstrating hemostasis of both proximal and distal bleeding after embolization.

It was then decided to use the 0.021-inch, 155-cm Angled Direxion™ Microcatheter in order to access the inferior branch. We did not want to lose purchase after having difficulty crossing the Pringle, so a 300-cm Transcend™-18 Microwire (Boston Scientific Corporation) was inserted, and we exchanged the straight catheter for the 0.021-inch Angled Tip 130-cm Direxion™ Microcatheter. Immediately after inserting the Direxion™ Catheter, we were able to access the inferior branch. Angiograms of this vessel actually demonstrated two areas of extravasation (one peripheral and one more central) (Figure 4).

The catheter was parked at the distal end of the vessel (past the first bleed, but proximal to the second bleed). We deployed three 2- X 4-mm and three 3- X 6-mm IDC™ Soft Microcoils (Boston Scientific Corporation) embolizing the distal bleed and coiling across the more proximal central bleed. Postembolization angiograms were obtained and hemostasis of both bleeds was achieved (Figure 5).

DISCUSSION

The patient recovered well and did not show any evidence of additional bleeding while in the hospital. He was extubated and transferred from the surgical intensive care unit to a regular hospital room. One week after the embolization procedure, the trauma team was preparing for the patient's discharge. ■

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Disclosures: None.