

# Endovascular Embolization of a Bleeding Liver

## Resident Corner

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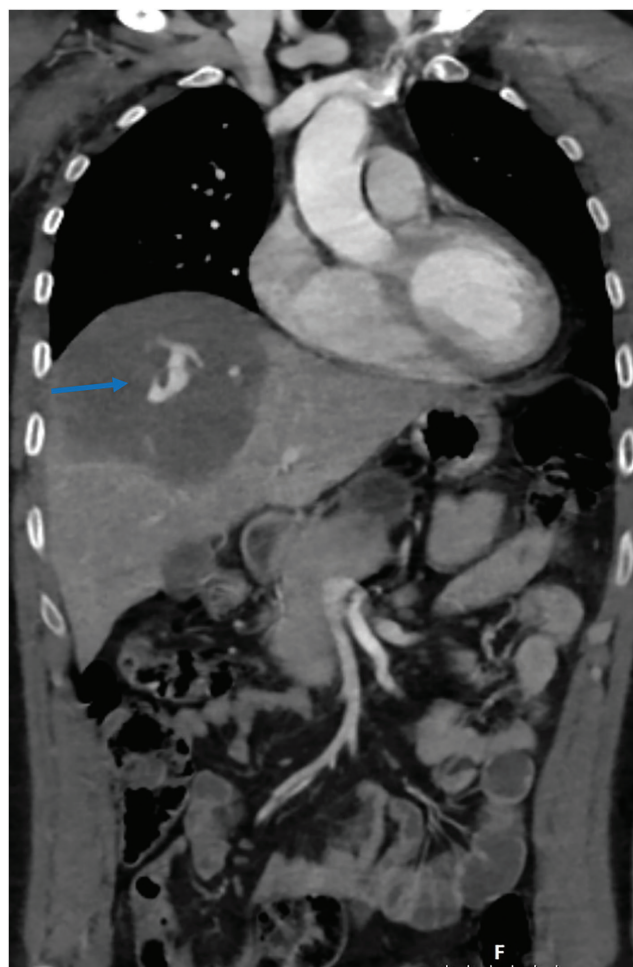
We present the case of a 37-year-old patient admitted after a motorcycle crash. He was hemodynamically stable. On computer tomography angiography (CTA) a  $13 \times 12 \times 8 \text{ cm}^3$  low-attenuated area within the right lobe of the liver with signs of contrast leakage was found, appearing as a large liver laceration with hematoma and active extravasation (Figure 1). Also, a 5 mm sub-capsular free fluid was detected. On the basis of the hemodynamic conditions, we opted for an endovascular approach and embolization for bleeding control was proposed. We used a 2.7 Fr microcatheter (Progreat™, Terumo, Tokyo, Japan). Embolization was performed by delivering seven 2 mm microcoils (Penumbra Ruby® Soft Coil, Alameda, CA, USA) (Figures 2–6). The patient remained hemodynamically stable after the procedure. Postoperative CTA after 12 hours did not show signs of ongoing bleeding, free air or intra-abdominal free fluid. No abscesses in the liver were found on follow-up CTA on days 2, 8 and 11, and no ischemic damage could be seen radiologically on day 29. The patient was monitored in the Intensive Care Unit for 11 days. Liver enzymes were normalized after 12 days and the patient was discharged after 16 days.

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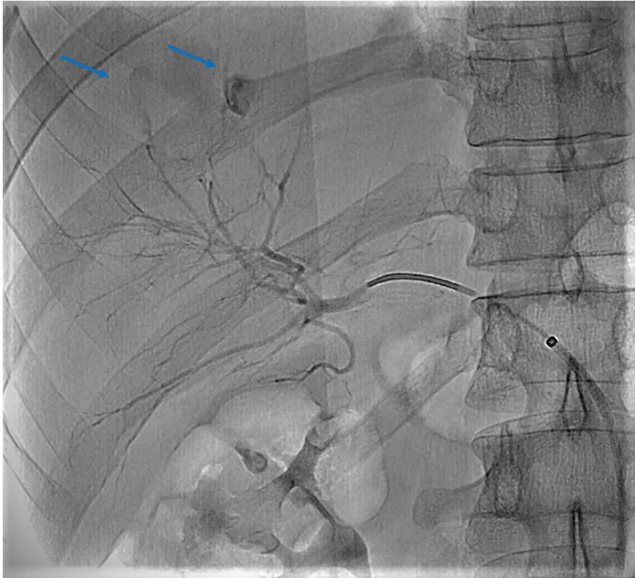
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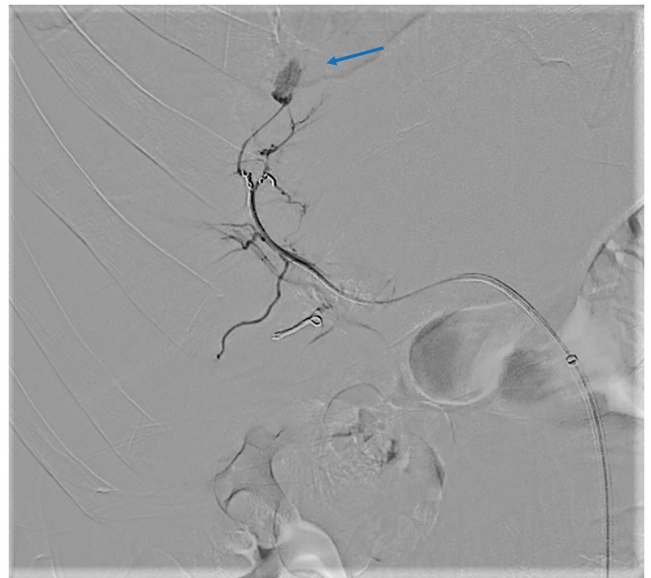
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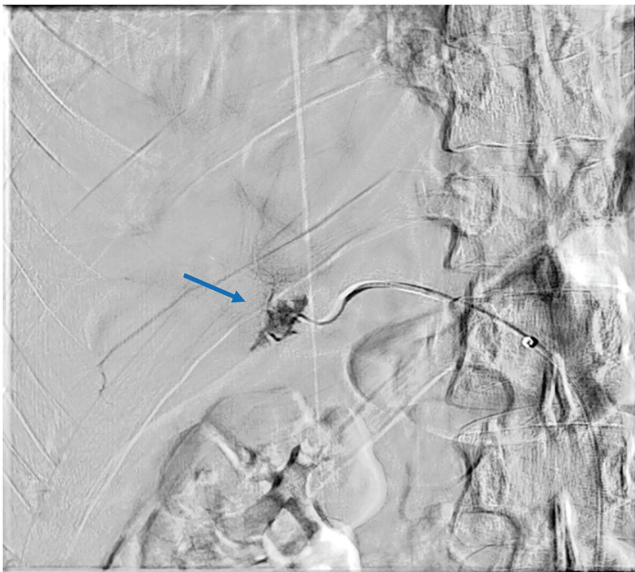
**Figure 1** CTA performed in the emergency setting revealed active extravasation in the liver (arrow).



**Figure 2** Selective angiography revealed an active blush from two separate arterial branches (arrows).



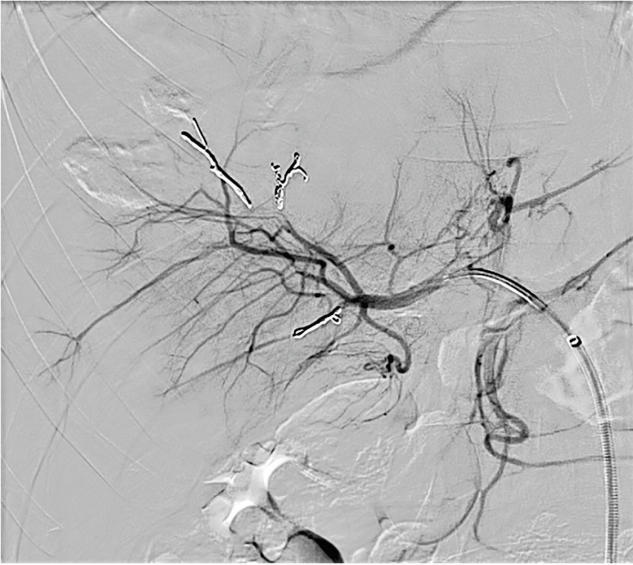
**Figure 4** Super selective angiography of the first branch (arrow) reveals persistent extravasation after delivery of two microcoils.



**Figure 3** Extravasation (arrow) after advancement of a guidewire and microcatheter, with possible iatrogenic injury.



**Figure 5** Super selective angiography of the arterial branch causing the second extravasation (arrow).



**Figure 6** The final angiogram post coiling shows no further blood extravasation.

### **Ethics Statement**

- (1) All the authors mentioned in the manuscript have agreed to authorship, read and approved the manuscript, and given consent for submission and subsequent publication of the manuscript.
- (2) The authors declare that they have read and abided by the JEVTM statement of ethical standards including rules of informed consent and ethical committee approval as stated in the article.

### **Conflicts of Interest**

The authors declare that they have no conflicts of interest.

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