

Cangrelor bridging strategy for liver damage after mechanical chest compression

A 48-year-old woman admitted herself with chest pain to the emergency department where she subsequently collapsed. She was in refractory ventricular fibrillation (Fig. 1-a1), and after 15 min of conventional CPR, a mechanical compression de-

vice (Fig. 1-a2) was applied, with return of spontaneous circulation after 25 min. EKG highlighted an anterior ST-elevation, with severe post-resuscitation myocardial dysfunction observed on Echo (Fig. 1-a3).

After administering Aspirin and crushed Ticagrelor, an emergent coronary angiography was performed with the evidence of an occluded LAD/diagonal bifurcation treated with a reverse-crush technique stenting (Fig. 1b, 1c, 1d).

The patient did very well in the following hours until unexpected hypotension occurred. Ultrasound revealed a grade III right liver injury with a ruptured sub-capsular hematoma (Fig.

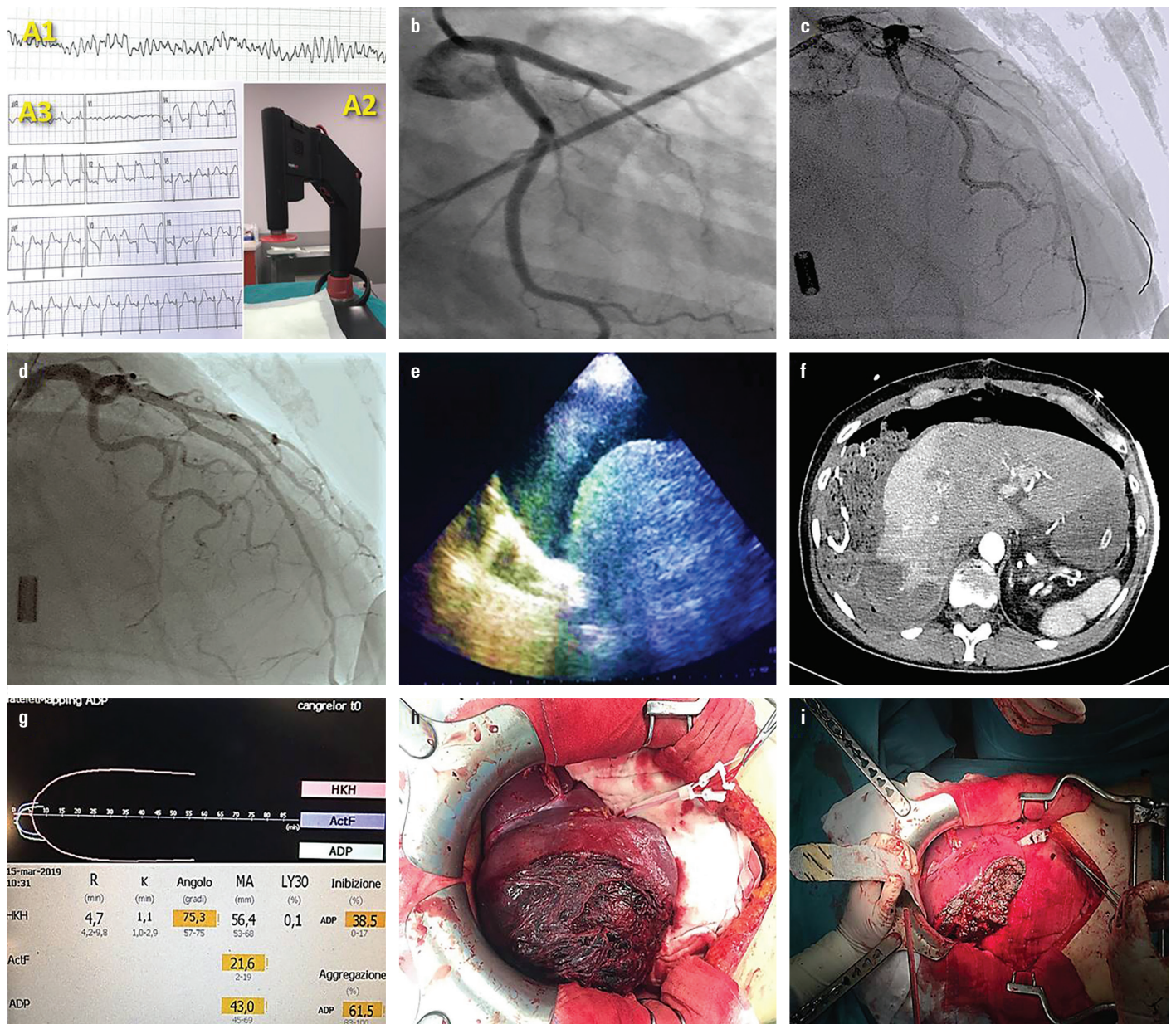


Figure 1. (a1, a2, a3) EKGs and chest compression device; (b, c, d) Interventional coronary angiographies; (e) trans-hepatic ultrasound view of pleural and perihepatic fluid collection; (f) Abdominal CT after perihepatic packing; (g) Thromboelastography/platelet function assay (TEG 6s Haemonetics®); (h) Right-sided view of the enlarged right liver lobe hematoma; (i) The remaining liver parenchyma after emergency liver resection

1e). An emergency laparotomy for damage control surgery with perihepatic packing was decided (Fig. 1f). Bleeding persisted after selective hepatic embolization, and a right hepatic lobectomy was performed. Bridging therapy with cangrelor was applied using thromboelastography with platelets mapping for drug titration (TEG 6s Haemonetics®) (Fig. 1g).

The lobectomy was successful (Fig. 1h, 1i), and the patient had a complete full recovery with normalization of the left ventricular function. She returned to work 1 month later in good health.

Antiplatelets and anticoagulants may exacerbate an existing liver injury into a large intrahepatic hematoma, a very rare flip side of successful resuscitation. The otherwise fatal complication, in a precarious ischemic–hemorrhagic balance, was successfully managed thanks to a perioperative bridge therapy with cangrelor titrated according to thromboelastography/platelet function assay and a coordinated multidisciplinary team approach.

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