

Resuscitative Endovascular Balloon Occlusion of the Aorta: Focusing on the Procedure

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Resuscitative endovascular balloon occlusion of the aorta (REBOA) has been reported as an effective and minimally invasive damage control technique for life-threatening abdominal or pelvic exsanguination. Although high-quality evidence regarding REBOA is still needed, it is important to understand the procedure and be able to put it into practice clinically. Thus, here we demonstrate the procedure of REBOA through a video clip which is based on two cases of successful REBOA.

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Key Words: Trauma; Resuscitation; Aorta; Balloon Occlusion; Hemorrhage

CASE

Resuscitative endovascular balloon occlusion of the aorta (REBOA) was successfully performed in two patients with life-threatening abdominal and pelvic bleeding as a result of blunt trauma. Both patients were admitted with unstable hemodynamics and massive abdomino-pelvic bleeding. Systolic blood pressure just before REBOA was less than 80 mmHg. A 75-year-old man had a ruptured spleen from a pedestrian traffic accident, and a 48-year-old man had an unstable pelvic fracture from an injury due to an 8-m fall. Both patients underwent REBOA with a targeted aortic location, accordant to zone I or III, in the emergency room (Video.) and then other damage control procedures or surgery was performed with permissive hypotension.

DISCUSSION

Two aortic zones are usually targeted for REBOA. Zone I is defined as a descending thoracic aorta from the origin of the left subclavian artery to the above part of the celiac artery for massive abdominal hemorrhage while zone III is as a infrarenal abdominal aorta above the aortic bifurcation for unstable pelvic hemorrhage (1). Using a 7-Fr balloon catheter (RESCUE Balloon™, Tokai Medical Products, Aichi, Japan), access to the femoral artery can be started using the Seldinger technique or ultrasound guidance. A 7-Fr introducer sheath and 0.025-inch guide wire accordant to the balloon catheter are needed. After positioning the balloon in an appropriate aortic zone for temporary abdomino-pelvic bleeding, placement is confirmed with a fluoroscopy or serial radiography following balloon inflation with a mixture of saline and contrast. Partial

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aortic occlusion with permissive hypotension is then established with an intermittent aortic balloon deflation to decrease distal ischemia and perfusion injury when feasible (2,3).

Conflicts of Interest Statement

None of authors have a conflict of interest.

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Video Legend

Video. A video recording shows resuscitative endovascular balloon occlusion of the aorta using a 7-Fr balloon catheter in the emergency room.