

Bridging therapy: coil and polymer embolisation of a ruptured penetrating aortic ulceration of the visceral aorta

Embolizacja pęknięcia aorty za pomocą polimeru i spiral: leczenie pomostowe

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A 74-year-old woman complaining of fatigue and abdominal pain that increased during physical examination was referred to our hospital. She was conscious but hypotensive with a haemoglobin level of 8.8 g/dL. Creatinine level of 2.2 mg/dL suggested concomitant acute renal insufficiency. Abdominal contrast-enhanced computer tomography (CECT) revealed a large haematoma (132 × 118 × 80 mm) with active extravasation of contrast medium at the level between the celiac trunk and superior mesenteric artery, filling the retroperitoneal space directly adjacent to the right kidney (Fig. 1). A penetrating aortic ulceration was considered the most probable underlying cause of rupture. Comorbidities disqualified the patient from surgical open repair and she was referred to the radiology suite for a non-standard emergency endovascular procedure. The procedure was performed under local anaesthesia using bilateral femoral access (10 F and 6 F sheaths). Aortography confirmed CECT findings (Fig. 2). Through the perforation, the retroperitoneal space was catheterised using a 5 F Cobra 1 catheter (Cook Medical Europe) and "jailed" with a SINUS XL 30 × 62 mm self-expandable stent (OptiMed) at the rupture level. This enabled safe filling of the retroperitoneal space with 18 pushable Nester coils (Cook Medical Europe) and 13 detachable Concerto coils (Covidien) of various sizes. Coil embolisation was followed by a 3-ampule injection of the liquid embolic agent Onyx 34 (Covidien) while protecting the potential polymer reflux with a 33-mm occlusion balloon (Equalizer, Boston Scientific). Control angiography revealed no sign of extravasation and preserved blood flow to the visceral arteries (Fig. 3). The patient was transferred to the intensive care unit for 4 days of observation. During her stay she regained kidney function and was transferred for further observation to an internal medicine ward to leave the hospital 12 days after the initial procedure. Bearing in mind that the performed procedure was only a bridging therapy, a branched endoprosthesis was ordered and a secondary aortic intervention was scheduled. Unfortunately, the patient was never readmitted for the procedure because she died 5 weeks after the primary procedure and just 1 week before the scheduled reintervention, with symptoms strongly suggesting another rupture at the sealing level. In conclusion, for patients with a ruptured aorta and with no means of traditional open or endovascular repair, sealing of the rupture site with embolisation polymers and coils can provide a bridging therapy before a prompt and definitive treatment can be established.



Figure 1. The calcified abdominal aorta and rupture with large haematoma in contrast-enhanced computer tomography

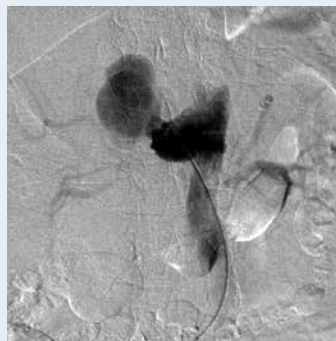


Figure 2. The retroperitoneal space catheterised with a Cobra 1 catheter. Angiography demonstrated extravasation



Figure 3. Final aortography showed no sign of extravasation

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