

Technique for Balloon Control of the Aorta during EVAR for Ruptured AAA

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Ruptured abdominal aortic aneurysm (AAA) with circulatory shock is often regarded as contraindication for endovascular aneurysm repair (EVAR) because instant aortic cross clamping is necessary. We describe a technique for rapid occlusion of the aorta with balloon catheters and deployment of a bifurcated stent graft while aorta is clamped.

A balloon catheter is inserted percutaneously from the contralateral femoral artery and inflated in the suprarenal aorta. The introducer sheath is long enough to support the balloon and prevent it from being pushed into the sac when blood pressure is normalised.

The stent-graft is passed from the ipsilateral groin and deployed distal to the balloon. A second balloon is inflated inside the stent graft below the renal arteries. It replaces the primary balloon to minimise suprarenal cross clamping time. The sheath that supported the primary, suprarenal occlusion balloon makes it possible to retrieve the primary balloon after the endograft has been deployed.

The contralateral limb extension is then deployed and the primary balloon is reinserted from the contralateral side to replace the infrarenal balloon inside the stent graft. This allows deployment of the ipsilateral limb. Sequential declamping is achieved by alternating balloon inflation inside either limb until the patient tolerates complete declamping.

This technique makes it possible to place a bifurcated aortic stent graft while the aorta is continuously “clamped” from a transfemoral approach. EVAR can be offered to patients with circulatory collapse from aneurysm rupture.