A 67-year-old woman presented with clinical evidence of expansion of an aortic aneurysm previously acquired after a deceleration trauma. The patient complained of frequently recurring interscapular and back pain and beginning hoarseness. In the differential diagnostic workup, pneumothorax and pulmonary embolism were excluded. The patient underwent MRI of the thoracic aorta and gadolinium-enhanced 3-dimensional MR angiography (MRA) that demonstrated morphological evidence of a fist-size intrathoracic aortic aneurysm (Figure 1A). Selective angiography excluded significant coronary artery disease and confirmed the diagnosis of a true aneurysm of the descending thoracic aorta (Figure 2A). Because dimensional evaluation of the aneurysm revealed a transverse diameter >5.0 cm and because recurrent episodes of back pain suggesting potential expansion were evident, elective interventional stent-graft placement was offered to the patient to exclude the aneurysm and stabilize the thoracic aorta. On the basis of the MRA, a custom-made stent graft was manufactured according to the dimensional requirements of the patient’s aorta; the nitinol stent with Dacron cover was inserted under general anesthesia and under transesophageal guidance in the catheter laboratory via a transfemoral access. Intraprocedural transesophageal echocardiography confirmed the aneurysm (Figure 3A) and was extremely helpful for both exact positioning of the stent graft and documentation of complete exclusion of the aneurysm. Moreover, transesophageal echocardiography demonstrated echogenic “smoke” as evidence of beginning thrombosis in the aneurysmatic sac (Figure 3B). Perfect stent placement was confirmed by repeat selective contrast angiography via a pigtail catheter in the left subclavian artery (Figure 2B). Recovery and clinical follow-up were uneventful, and MRA 10 days later confirmed persistent exclusion of the aneurysm and a perfectly reconstructed thoracic aorta (Figure 1B).

Figure 1. A, Three-dimensional MRA after injection of gadolinium-DTPA showing posttraumatic symptomatic aneurysm of descending thoracic aorta. Adjacent aortic tube appears normal. B, Morphology of thoracic aorta after exclusion (abolition) of fist-sized aneurysm by interventional placement of a customized stent graft (Dacron-covered self-expandable nitinol stent). Aorta is successfully reconstructed, and aneurysmal sac is thrombosed; stent struts are identified by artifacts of high signal intensity.
Figure 2. A, During implantation procedure, selective angiography of thoracic aorta via left subclavian access confirms dimension of aortic aneurysm. B, After stent graft was launched via femoral access, perfect placement of stent graft and complete exclusion of aneurysm are documented by a second contrast aortogram.

Figure 3. A, Intraprocedural transesophageal ultrasound demonstrates thoracic aneurysm in long-axis view before stent-graft placement. B, Exact positioning of stent graft is confirmed, with complete abolition of aneurysm and beginning thrombosis in aneurysmal sac, as suggested by echogenic “smoke” (X).
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