STENT-GRAFT ENTRY CLOSURE AND BALLOON FENESTRATION FOR A CASE OF AORTIC DISSECTION ACCOMPANIED BY ORGAN MALPERFUSION

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The advantages of stent-graft entry closure for aortic dissection were introduced by the Stanford group. The purpose is to seal a primary entry by endovascular stent-grafting, thereby decompressing the false lumen and leading to thrombosis in the false lumen. However, in the case of renal or mesenteric artery malperfusion from a false lumen, stent-graft entry closure might result in ischemic organ failure caused by thrombosis of the false lumen. We report on a case of aortic dissection associated with renal and mesenteric artery malperfusion that was treated successfully by stent-graft entry closure and balloon fenestration to secure kidney and intestinal blood flow.

Clinical summary. A 42-year-old man with a chronic Stanford type B dissection was a candidate for stent-graft treatment. A primary entry site was detected at the proximal descending thoracic aorta. The superior mesenteric artery and left renal artery could not be delineated by preoperative angiograms of the true lumen, which indicated that they were perfused from the false lumen (Fig 1). After informed consent was obtained, the endovascular procedure was performed in the operating room with the patient under general anesthesia. An intravascular ultrasonic (IVUS) catheter (6F, 12.5 Mz, Sonicath; Boston Scientific Co, Boston, Mass) was introduced via the right femoral artery into the aorta. On the contralateral femoral artery, a 5F pigtail catheter (Cook Group Incorporated, Bloomington, Ind) was introduced over a 0.035-inch stiff guide wire (Amplatz Super Stiff; Boston Scientific Co). Under IVUS monitoring...
and fluoroscopic guidance, a guide wire was passed through the intimal flap into the false lumen.

The right femoral artery was exposed. Three thousand units of heparin sodium was administered intravenously and activated coagulation time was kept over 200 seconds. A 400-cm 0.032-inch guide wire was introduced through the right brachial artery and threaded down to the abdominal aorta. The distal end of the guide wire was caught with a snare catheter (Amplatz goose-neck snare; Microvena Co, White-Bear Lake, Minn) and picked up at the femoral artery. A 20F sheath (Keller Timmerman Sheath; Cook Group Incorporated) was introduced transfemorally over the guide wire with the tug-of-wire technique. The stent-graft was constructed from a self-expanding Gianturco Z stent (Cook Group Incorporated) and thin-wall woven polyester fabric (Ube woven-graft; Ube Industries, Inc, Ube, Japan). The proximal diameter of the stent-graft was 36 mm and the distal diameter was 28 mm. The length of the stent-graft was 180 mm. The stent-graft was delivered through the sheath and sealed the primary entry.

Flow of contrast material from the true lumen to the superior mesenteric artery was not detected by digital subtraction angiography. An angioplasty balloon catheter positioned across the intimal flap. Postoperative angiogram revealed that the stent-graft closed the entry of the false lumen.
ment and balloon fenestration for aortic dissection. In our experience, stent-graft entry closure after balloon fenestration is a less invasive endovascular treatment in the case of type B dissection associated with organ malperfusion. In this case, we used a 10-mm balloon to effect the fenestration. Further investigation will be necessary to determine the optimal balloon size.

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