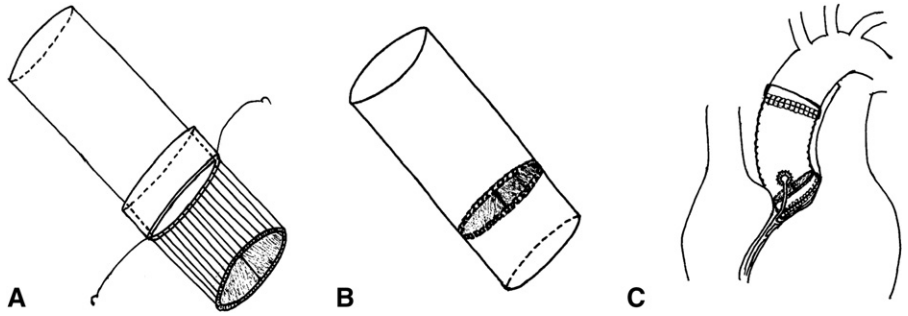

FIGURE 1. The modified Bentall procedure is performed through the following main steps, which are slightly different from those of a standard Bentall operation. A, First, the proximal end of the vascular graft is everted outward and upward for about 1 cm. A mechanical prosthesis is sutured to the free margin of the everted graft with a continuous 3-0 polyester suture to fix the bottom border of prosthesis to the graft. B, Once the anastomosis is completed, the homemade composite conduit is everted and returned to its original position. The composite graft is ready for aortic root replacement. C, The proximal anastomosis is performed with everting 2-0 polyester mattress sutures between the aortic annulus and the proximal free edge. Then the coronary reimplantation and distal anastomosis are performed.

TABLE 2. Clinical details, outcomes, and follow-up of patients with modified Bentall procedure

Patient	Detachment location	Time	Procedure	Complications	Outcome	Follow up	Echocardiography
1	RCC, partial NCC	Feb 2007	CarboMedics, 23A valved conduit	No	Discharged	Alive	Good
2	RCC, partial NCC	Aug 2007	CarboMedics, 25A valved conduit	VF	Discharged	Alive	Good

RCC, Right coronary cups; *NCC,* noncoronary cups; *VF,* ventricular fibrillation.

Nevertheless, further investigation is required because of the small cohort of patients and the short follow-up time.

References

1. De Cicco G, Lorusso R, Colli A, Nicolini F, Fragnito C, Grimaldi T, et al. Aortic valve periprosthetic leakage: anatomic observations and surgical results. *Ann Thorac Surg*. 2005;79:1480-5.
2. Lansac E, Lim KH, Shomura Y. Dynamic balance of the aortomitral junction. *J Thorac Cardiovasc Surg*. 2002;123:911-7.
3. Ando M, Kosakai Y, Okita Y, Nakano K, Kitamura S. Surgical treatment of Behçet's disease involving aortic regurgitation. *Ann Thorac Surg*. 1999;68:2136-40.
4. Okada K, Eishi K, Takamoto S, Ando M, Kosakai Y, Nakano K, et al. Surgical management of Behçet's aortitis: a report of eight patients. *Ann Thorac Surg*. 1997;64:116-9.

Successful emergency surgery for coexistent acute aortic syndrome and acute carotid artery obstruction

Masahiko Ando, MD, Kazuhito Imanaka, MD, Hideaki Yamabi, MD, and Hiroshige Sato, MD, Saitama, Japan

Few surgeons advocate surgical intervention for patients with acute aortic syndrome and coma, especially on an emergency basis, because of very poor outcome.[1] We herein describe an emergency operation for a comatose and hemiplegic octogenarian in a state of profound shock caused by rupture of a penetrating aortic ulcer (PAU) in the ascending aorta. Duplex scanning disclosed a slightly mobile thrombus nearly impacting into the right internal carotid artery. This patient successfully underwent replacement of the ascending aorta and right carotid endarterectomy concomitantly. Removal of this thrombus appeared to be highly beneficial. Preoperative evaluation of the carotid arteries has priority in patients with acute aortic syndrome and some neurologic deficits.

From the Department of Cardiovascular Surgery, Saitama Medical Center, Saitama, Japan.
Received for publication May 11, 2008; revisions received May 11, 2008; accepted for publication May 26, 2008; available ahead of print Sept 22, 2008.
Address for reprints: Masahiko Ando, MD, 1981 Tsujido-machi, Kamoda, Kawagoe-shi, Saitama 350-8550, Japan (E-mail: masandoo@hotmail.com).
J Thorac Cardiovasc Surg 2009;138:771-3
0022-5223/$36.00

doi:10.1016/j.jtcvs.2008.05.063

CLINICAL SUMMARY

An 82-year-old man with a history of hypertension suddenly fell unconscious and exhibited left hemiplegia. He was transferred to our emergency care unit in a state of profound shock. Echocardiographic analysis revealed cardiac tamponade, which necessitated immediate surgical drainage. Computed tomographic scanning of the chest demonstrated adventitial hematoma in the ascending aorta (Figure 1), massive calcification in the entire aorta, and no aortic dissection. The results of brain computed tomographic scanning were unremarkable. Duplex ultrasonographic analysis of the carotid arteries detected a slightly mobile thrombus nearly impacting in the right internal carotid artery (Figure 1). Laboratory data were almost normal, except preexisting platelet increase to greater than 1,300,000/mm^3.

Emergency aortic surgery was deemed necessary in this critically ill patient. The thrombus in the right carotid artery was a likely cause of left hemiplegia and coma and appeared to be harmful if left untouched during aortic surgery. Therefore concomitant removal of this thrombus was indicated. During systemic cooling, removal of a fresh thrombus, 5 mm in diameter (Figure 2), and carotid endarterectomy were performed because a large calcified ulcer existed at the ostium of the internal carotid artery. Subsequently, replacement of the ascending aorta was performed. There was an ulcerated penetration, 7 mm in size, covered by a fresh thrombus in the posterior wall of the ascending aorta (Figure 2). Both thrombi in the ascending aorta and in the carotid artery were very fresh and looked quite alike. His postoperative course was somewhat complicated because of a small cerebral infarction and dysphagia, and the patient was eventually discharged from our hospital on foot and without major neurologic deficit 3 months later.

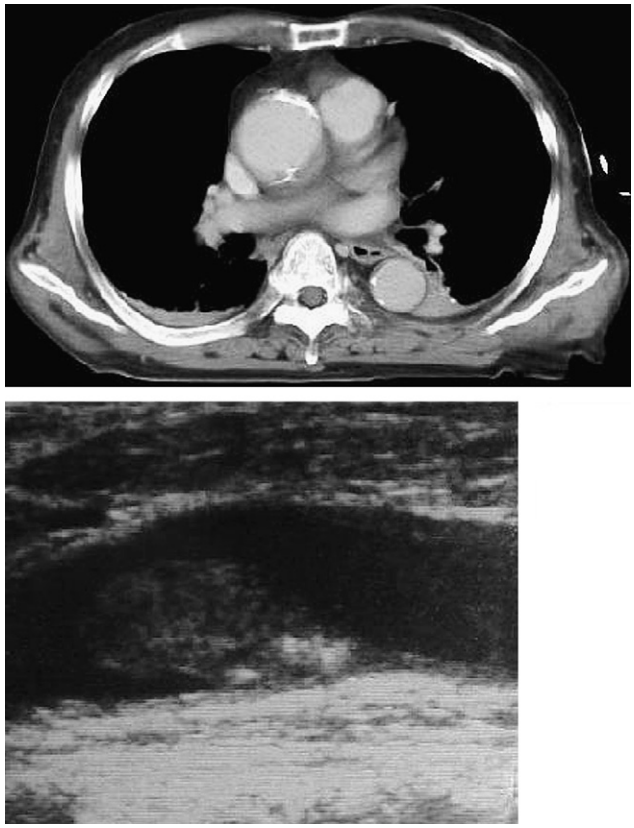

FIGURE 1. Chest computed tomographic scan *(top)* showing adventitial hematoma and a small ulcer with calcification in the posterior wall of the ascending aorta. A duplex scan *(bottom)* reveals a thrombus in the right internal carotid artery.

DISCUSSION

PAU is relatively rare and accounts for 7.6% of patients whose initial diagnosis was an acute aortic dissection.[2] The descending aorta is the most frequent portion of the PAU.[2] It is predominantly encountered in a population of advanced age.[3] Its rupture rate is as high as 40%,[3] and its prognosis is worse than that of acute aortic dissection.[2] Therefore accurate diagnosis and proper primary care are very important, and PAU should be recognized as a possible cause of cardiac tamponade.

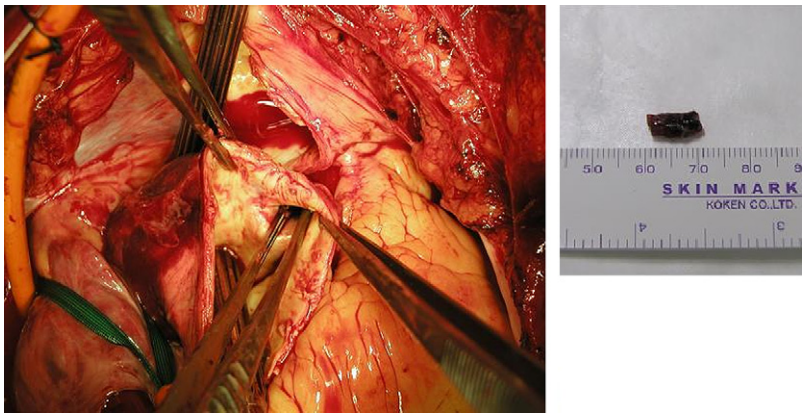

FIGURE 2. An ulcerated penetration in the posterior wall of the ascending aorta *(left)*, and a fresh thrombus that had been preoperatively detected by means of duplex scanning in the right carotid artery *(right)*.

We have previously described the usefulness of carotid artery repair during an emergency operation for a patient with acute aortic dissection and cerebral malperfusion.[4] Because of very poor outcome,[1] however, emergency aortic surgery for such patients is often evaded. In this comatose patient life-threatening bleeding with profound shock prompted surgical intervention, and a concomitant operation for the aorta and the carotid artery was performed, although it was unknown whether removal of the thrombus in the carotid artery might ameliorate his neurologic deficits. Surgical intervention for PAU is not very uncommon. Some recent studies show the benefits of the operation in patients with acute aortic dissection and evident neurologic deficits,[5] but no article is available that describes aggressive concomitant surgery for the aorta and the carotid artery. Severe hypotension or impaired organ perfusion generally accompanies acute aortic syndrome and can cause unexpected clot formation, although increased platelet count might have been another important prerequisite in this case. If the thrombus was left unnoticed and only surgical intervention for the PAU was performed in this patient, fatal brain malperfusion would have surely developed. In patients with acute aortic syndrome and neurologic deficits, we should have high indices of suspicion of thrombi in the aorta and other vessels, and preoperative duplex scanning of the carotid arteries is mandatory. We strongly recommend scanning of the carotid arteries before placing a central venous catheter and consideration of concomitant surgery for the aorta and the carotid artery, if indicated.

References

1. Hagan PG, Nienaber CA, Isselbacher EM, et al. New insights into an old disease. *JAMA*. 2000;283:897-903.
2. Coady MA, Rizzo JA, Hammond GL, Pierce JG, Kopf GS, Eleftriades JA. Penetrating ulcer of the thoracic aorta: what is it? How do we recognize it? How do we manage it? *J Vasc Surg*. 1998;27:1006-16.
3. Troxler M, Mavor AI, Homer-Vanniasinkam S. Penetrating atherosclerotic ulcers of the aorta. *Br J Surg*. 2001;88:1169-77.
4. Imanaka K, Nishimura M, Masuoka A, et al. Lethal thrombus in the carotid artery during operation for acute aortic dissection with cerebral malperfusion. *Ann Thorac Surg*. 2004;77:1448-9.
5. Marco P, Passalunghi D, Moneta A, et al. Coma might not preclude emergency operation in acute aortic dissection. *Ann Thorac Surg*. 2006;81:1348-52.

Video-assisted cardioscopy in the repair of persistent mitral paraprosthetic leak

Narain Moorjani, MD, FRCS, Jack Broadhurst, MB ChB, and Sunil Ohri, MD, FRCS, Southampton, United Kingdom

Paraprosthetic leak after mitral replacement varies between 2% and 17%. The risk factors implicated in its cause include continuous suture techniques, annular calcification, and replacement in the presence of infective endocarditis. Although several surgical treatment options exist, including direct suturing, suturing an autologous pericardial patch, or rereplacement, each can be associated with recurrence. This is in part due to the access to the mitral valve annulus in patients undergoing redo mitral surgery. In this case report such a patient with a recurrent mitral paraprosthetic leak is described, in whom use of intraoperative video-assisted cardioscopy aided the closure of a paraprosthetic lesion.

CLINICAL SUMMARY

Ten years previously, a 72-year-old man had been given a diagnosis of severe mitral regurgitation caused by the flail P2 segment of his posterior mitral valve leaflet. This was initially treated with quadrangular resection of P2 and sliding annuloplasty. Unfortunately, in the postoperative period, moderate mitral regurgitation was observed, and the valve was replaced with a 27-mm mechanical prosthesis (St Jude, St Paul, Minn). Access to the mitral valve had been difficult, and hence a transseptal approach was used. Within a year, the patient became symptomatic again, and echocardiographic analysis demonstrated a significant paraprosthetic leak in the anterior aspect of his mitral valve. Operative findings included 2 holes in the anterior paravalvular region (5 and 2 mm, respectively). These were closed with pledgeted horizontal mattress 2-0 Ethibond sutures (Ethicon, Inc, Somerville, NJ) to good effect. Nine years

From the Department of Cardiothoracic Surgery, Southampton General Hospital, Southampton, United Kingdom.

Received for publication May 8, 2008; accepted for publication May 25, 2008; available ahead of print Sept 22, 2008.

Address for reprints: Narain Moorjani, MD, FRCS, c/o Mr S Ohri's secretary, Department of Cardiothoracic Surgery, Southampton General Hospital, Southampton, SO16 6YD, United Kingdom (E-mail: narain.moorjani@doctors.org.uk).

J Thorac Cardiovasc Surg 2009;138:773-4
0022-5223/$36.00

doi:10.1016/j.jtcvs.2008.05.064