when used in combination, especially in the prevention of neurologic injury. However, further studies with a large number of patients are warranted to elucidate the exact correlation between single and multiple techniques of preserving organ function and improving the postoperative course so that reduction of mortality and morbidity may be realistically considered.

Addendum

From January to March 1999, another 2 patients with ruptured TAAA were admitted to our surgical unit. The first had a type IV aneurysm with a diameter of 9.5 cm (measured by computed tomography, which also revealed an anterolateral rupture); the patient died before the operation of hemorrhagic shock and consequently intractable cardiac arrest. The second patient had a type I aneurysm with a maximum diameter of 12 cm and with a large posterior aortic laceration (intraoperative view). This patient had 3 cardiac arrests before the operation and was operated on in a state of severe hypotension (systolic blood pressure of 50 mm Hg). The entire descending aorta was replaced. After 7 days the patient died of multiorgan failure.

REFERENCES

1. Svensson LG, Crawford ES, Hess KR, Coselli JJ, Safi HJ. Experience with 1509 patients undergoing thoracoabdominal aortic operations. *J Vasc Surg* 1993;17:357-70.
2. Livesay JL, Cooley DA, Ventemiglia RA, et al. Surgical experience in descending thoracic aneurysmectomy with and without adjuncts to avoid ischemia. *Ann Thorac Surg* 1985;39:37-46.
3. Svensson LG, Hess KR, D'Agostino RS, et al. Reduction of neurologic injury after high-risk thoracoabdominal aortic operation. *Ann Thorac Surg* 1998;66:132-8.
4. Safi HJ, Miller CC III, Carr C, Iliopoulos DC, Dorsay DA, Baldwin JC. Importance of intercostal artery reattachment during thoracoabdominal aortic aneurysm repair. *J Vasc Surg* 1998;27:58-66.
5. Safi HJ, Campbell MP, Miller CC III, et al. Cerebral spinal fluid drainage and distal aortic perfusion decrease the incidence of neurological deficit: the results of 343 descending and thoracoabdominal aortic aneurysm repairs. *Eur J Vasc Endovasc Surg* 1997;14:118-24.
6. Coselli JS, LeMaire SA, Poli de Figueiredo L, Kirby RP. Paraplegia after thoracoabdominal aortic aneurysm repair: Is dissection a risk factor? *Ann Thorac Surg* 1997;63:28-36.
7. Crawford ES, Crawford JL, Safi HJ, et al. Thoracoabdominal aortic aneurysms: preoperative and intraoperative factors determining immediate and long-term results of operations in 605 patients. *J Vasc Surg* 1986;3:389-404.
8. Kaplan EL, Meier P. Nonparametric estimation from incomplete observations. *J Am Stat Assoc* 1958;53:457-81.
9. Panneton JM, Hollier LH. Nondissecting thoracoabdominal aortic aneurysms: part I. *Ann Vasc Surg* 1995;9:503-14.
10. Archer CW, Wynn MM, Hoch JR, Popic P, Archibald J, Turnipseed WD. Combined use of cerebral spinal fluid drainage and naloxone reduces the risk of paraplegia in thoracoabdominal aneurysm repair. *J Vasc Surg* 1994;19:236-46.
11. Cox GC, O'Hara PJ, Hertzner NR, Piedmonte MR, Krajewski LP, Beven EG. Thoracoabdominal aneurysm repair: a representative experience. *J Vasc Surg* 1992;15:780-8.
12. Kouchoukos NT, Daily BB, Rokkas CK, Murphy SF, Bauer S, Abboud N. Hypothermic bypass and circulatory arrest for operations on the descending thoracic and thoracoabdominal aorta. *Ann Thorac Surg* 1995;60:67-77.
13. Scepens MAAM, Defauw JJAM, Hamerlijnck RPHM, Vermeulen FEE. Use of left heart bypass in the surgical repair of thoracoabdominal aortic aneurysms. *Ann Vasc Surg* 1995;9:327-38.
14. Svensson LG, Crawford ES, Hess KR, Coselli JS, Safi HJ. Variables predictive of outcome in 832 patients undergoing repairs of the descending thoracic aorta. *Chest* 1993;104:1248-53.
15. Mauney MC, Blackburne LH, Langenburg SE, Buchanan SA, Kron IL, Tribble CG. Prevention of spinal cord injury after repair of the thoracic or thoracoabdominal aorta. *Ann Thorac Surg* 1995;59:245-52.
16. Frank SM, Parker SD, Rock P. Moderate hypothermia with partial bypass and segmental sequential repair for thoracoabdominal aortic aneurysm. *J Vasc Surg* 1994;19:687-97.
17. Schepens MAAM, Defauw JJ, Hamerlijnck MP, Vermeulen FE. Risk assessment of acute renal failure after thoracoabdominal aortic aneurysm surgery. *Ann Surg* 1994;219:400-7.
18. Svensson LG, Coselli JS, Safi HJ, Hess KR, Crawford ES. Appraisal of adjuncts to prevent acute renal failure after surgery on the thoracic and thoracoabdominal aorta. *J Vasc Surg* 1989;10:230-9.
19. Safi HJ, Harlin SA, Miller CC, et al. Predictive factors for acute renal failure in thoracic and thoracoabdominal aortic aneurysm surgery. *J Vasc Surg* 1996;24:338-44.
20. Gilling-Smith GL, Worswick L, Knight PF, Wolfe JH, Mansfield AO. Surgical repair of thoracoabdominal aortic aneurysm: 10 years' experience. *Br J Surg* 1995;82:624-9.
21. Girardi LN, Coselli JS. Repair of thoracoabdominal aortic aneurysms in octogenarians. *Ann Thorac Surg* 1998;65:491-5.
22. O'Hara PJ, Hertzner NR, Krajewski LP, et al. Ten-year experience with abdominal aortic aneurysm repair in octogenarians: early results and late outcome. *J Vasc Surg* 1995;21:830-8.
23. Orecchia PM, Berger PW, White CJ, et al. Coronary artery disease in aortic surgery. *Ann Vasc Surg* 1988;2:28-36.

Commentary

In this series of 19 patients who underwent an emergency operation for thoracoabdominal aneurysm, 42.1% died, one third became paraplegic, and almost one half had acute renal failure. Clearly, surgery in this critically ill group of patients carries high risks. The role of various adjuncts to prevent these complications is difficult to evaluate in the experience reported because of the small numbers of patients, the heterogeneity of the extent of aneurysms, and the varying clinical presentations of the patients. As occurred in this experience, some patients, even with a true rupture that is contained, will be in hemodynamically stable condition for a while and can be treated with surgical adjuncts in a manner similar to patients having elective

operations. However, in the case of hypotension or free rupture, consideration should be given to performance of the simplest, most rapid operation possible. Rapid control of the proximal aorta followed by expeditious restoration of visceral and lower limb blood flow from a short clamp time should be the priority in these patients. "Nonsurgical" problems such as hypothermia, metabolic acidosis, and coagulopathy can easily assume overwhelming importance in these patients,

despite the technical success of the operation. Referral of these patients before rupture of these aneurysms requires ongoing education of the medical community as to the benefits and relative safety of elective operations compared with operations after rupture has occurred. The patient with a ruptured thoracoabdominal aneurysm represents an extreme surgical challenge, and the authors are to be commended for their efforts to improve the care of these critically ill patients.

Gerald M. Lawrie, MD
Houston, Texas
12/1/101331

ON THE MOVE?

Send us your new address at least six weeks ahead

Don't miss a single issue of the journal! To ensure prompt service when you change your address, please photocopy and complete the form below.

Please send your change of address notification at least six weeks before your move to ensure continued service. We regret we cannot guarantee replacement of issues missed due to late notification.

JOURNAL TITLE:

Fill in the title of the journal here. _____

OLD ADDRESS:

Affix the address label from a recent issue of the journal here.

NEW ADDRESS:

Clearly print your new address here.

Name _____

Address _____

City/State/ZIP _____

COPY AND MAIL THIS FORM TO:

Periodical Subscription Services
Mosby, Inc.
11830 Westline Industrial Dr.
St. Louis, MO 63146-3318

OR FAX TO:

314-432-1158

Mosby

OR PHONE:

1-800-453-4351
Outside the U.S., call
314-453-4351