to primarily affect asthenic young women. This article is a retrospective study of 18 patients (15 women, 3 men) treated for median arcuate syndrome at the authors' institution. Their median age was 46.2 years. The diagnosis was made by a combination of abdominal symptoms and radiologic demonstration of anterior compression of the celiac artery on angiography. All 18 patients were treated by open operation with decompression of the celiac access, but 11 patients also underwent additional vascular reconstruction of the celiac access for fixed narrowing of the celiac access. Three patients in this series also had treatment of superior mesenteric artery stenosis. After the primary operation, 28% underwent some type of revision procedure. Follow-up was possible in 15 patients, with a mean duration of 3.5 years after surgery. At the end of their follow-up, 11 of the 15 patients (73.33%) were free of abdominal symptoms.

Comment: Flow in the celiac artery does not increase significantly with eating owing to the high fixed metabolic requirements of the liver and spleen. It is therefore unclear why postprandial pain should be ascribed as a feature of celiac access compression. The authors point out that if one is going to operate for a diagnosis of celiac axis compression, one should be prepared to perform some sort of intervention on the celiac artery itself. In many cases there is a fixed narrowing of the celiac artery, and if the goal of the surgery is to relieve narrowing of the celiac artery, it is very likely that some sort of reconstruction of the celiac axis will be required in addition to incising the overlying diaphragmatic and ganglionic tissue. The article doesn't really help us with the primary question of how to select patients for surgery. A description of the patients the authors chose not to intervene on would have been just as useful, or perhaps more useful, as the description of their operative techniques and results.

Moderate Carotid Artery Stenosis: MR Imaging-Depicted Intraplaque Hemorrhage Predicts Risk of Cerebrovascular Ischemic Events in Asymptomatic Men

Singh N, Moody AR, Gladstone BJ, et al. Radiology 2009;252:502-8.

Conclusion: In men with moderate carotid artery stenosis, intraplaque hemorrhage detected by magnetic resonance imaging (MRI) is a marker of future ipsilateral cerebrovascular events.

Summary: By 2032, mortality from stroke in the United States is predicted to rise to 275,000 patients per year (Stroke 2003;34:2109-12). Intraplaque hemorrhage (IPH) is a marker of carotid plaque instability. Necrotic core size and plaque volume are features that contribute to plaque rupture. It is possible to use MRI to identify IPH.

The authors studied 91 men (mean age, 74.8 years; range, 47-88 years). They were selected from those who had attended a vascular clinic between 2003 and 2006 and by duplex ultrasound imaging had a 50% to 70% internal carotid artery stenosis that was asymptomatic. Patients in whom IPH was detected on MRI were identified retrospectively, and 75 men with 98 eligible arteries were included. The follow-up was for a minimum of 1 year (mean, 24.92 months; range, 12-43 months). Ipsilateral cerebrovascular events were compared between carotid arteries with and those without MRI-depicted IPH. There were 36 carotid arteries (36.7%) with MRI-depicted IPH. In the carotid distributions with IPH, six cerebrovascular events (2 strokes and 4 transient ischemic attacks) occurred during follow-up. No clinical events occurred in carotid arteries without IPH. Cox regression analysis indicated MRI-depicted IPH was associated with an increased risk of cerebrovascular events (hazard risk, 3.59; 95% confidence interval, 2.48-4.71; $P < .001$). Given that there were no events in IPH-negative patients, the negative predictive value for the absence of IPH for clinical outcome was 100%.

Comment: The unstated, but intriguing, suggestion of this study is that if a patient presents with an asymptomatic carotid stenosis, risk stratification with MRI may be appropriate. If the MR study shows no evidence of IPH, then perhaps the patient can be watched and endarterectomy avoided, thus reducing the large number of endarterectomies performed in asymptomatic patients, most of whom will never have a neurologic event. This small study is not going to change clinical practice. If analysis were performed only for stroke, it is likely that only two strokes would not be statistically different from the neurologic event rate in the patients without intraplaque hemorrhage. The observations are interesting, but larger studies that use stroke-only as an end point will be required before patients with >60% duplex-detected asymptomatic internal carotid artery stenosis by duplex scanning are also routinely evaluated with an MRI study of their carotid.

Preliminary Results of a Prospective Randomized Trial of Restrictive Versus Standard Fluid Regime in Elective Open Abdominal Aortic Aneurysm Repair

McArdle GT, McAuley DF, McKinley A, et al. Ann Surg 2009;250:28-34.

Conclusion: A restricted perioperative fluid regimen can prevent major complications after open abdominal aortic aneurysm (AAA) repair and reduces overall hospital stay.

Summary: Open AAA repair is associated with a mortality rate of about 4% to 6%. Variations in the death rate are influenced by age and significant medical comorbidities. The authors' previously published data suggesting that excessive positive fluid balance is associated with major complications after open AAA repair (Eur J Vasc Endovasc Surg 2007;34:522-7). In the current study, they tested their hypothesis that perioperative fluid restriction would reduce complications and improve outcome after open elective AAA repair. This was a prospective, randomized controlled trial, but was not blinded.

Patients undergoing elective open infrarenal AAA repair were randomized to a restricted or standard perioperative fluid administration regimen. The primary outcome measure was the rate of major complications. Secondary outcome measures included length of stay and intensive care unit stay, urinary albumin/creatinine ratio, fraction of inspired oxygen/oxygen pressure ratio, and a sequential organ failure assessment score as well as assessment of psychiatric illness perioperatively. Patients undergoing standard fluid administration received, at the time of epidural catheter placement, a preloaded infusion of crystalloid of 10 mL/kg of normal saline. Those in the restricted group did not receive a normal saline preload. During surgery, crystalloid was administered at 12 mL/kg in the standard group and 4 mL/kg in the restricted group. Postoperatively on the day of surgery, the standard group received 125 mL/kg crystalloid and the restricted group 83 mL/kg crystalloid. On postoperative days 1 to 5, the standard group received 1 liter of normal saline and 2 L of 5% dextrose daily, whereas those in the restricted group received 0.5 L of normal saline and 1.5 L of 5% dextrose daily.

There were 22 patients randomized in the study. The study was stopped early by the institutional safety committee because of excessive morbidity in the standard fluid group. There were no in hospital deaths and no 30-day mortality in either group. The cumulative fluid balance on day 5 postoperatively for the standard group was 8242 ± 714 mL compared with 2570 ± 977 mL in the restricted group ($P < .01$). One major complication, temporary dialysis for 3 days, occurred in the restricted fluid group, but 14 major complications occurred in the standard group, including 4 with acute delirium, 4 with pneumonia, 1 myocardial infarction, 1 episode of pulmonary edema, 1 episode of arrhythmia, and 1 wound dehiscence as well as an episode of urinary tract infection and septicemia. Total postoperative length of stay was also significantly reduced in the restricted group compared with the standard group ($P < .01$ and $P < .025$, respectively).

Comment: Many surgeons believe patients undergoing surgery associated with significant blood loss require liberal fluid replacement to maintain extracellular fluid volume. The authors point out this practice is not evidence based and that extracellular fluid volume may actually be well maintained or even expanded after surgery. One of the most common complications noted in this study was acute delirium. The study was not designed to assess potential causes of delirium. Nevertheless, delirium is a well recognized complication of aortic aneurysm repair and it is intriguing to speculate that this may be at least partly related to perioperative fluid administration.

Vacuum-Pack Temporary Abdominal Wound Management with Delayed-Closure for the Management of Ruptured Abdominal Aortic Aneurysm and Other Abdominal Vascular Catastrophes: Absence of Graft Infection in Long Term Survivors

Ross CB, Irwin CL, Mukherjee K, et al. Am Surg 2009;75:565-71.

Conclusion: Vacuum-pack temporary abdominal wound management with a delayed closure of abdominal wounds does not lead to late graft infection after major abdominal vascular procedures.

Summary: Patients undergoing treatment for ruptured abdominal aortic aneurysm (AAA) or other major abdominal vascular catastrophes are critically ill and may be resuscitated with large volumes of fluid and blood products. They may also have associated periods of hypotension and acidemia and be complicated by large retroperitoneum hematomas and bowel edema. In such patients, delayed closure of the abdomen with wound management using a vacuum-pack temporary abdominal wound closure may prevent or be used to treat abdominal compartment syndrome. There is a theoretic risk of prosthetic graft infection with open abdominal wound management. The authors examined long-term outcomes of survivors of major abdominal vascular procedures managed with delayed abdominal wound closure between the years 2000 and 2007 to assess for evidence of late vascular graft infection. They reviewed operative logs from two community hospitals and a university hospital to identify patients during the study period with abdominal vascular procedures who were treated with delayed abdominal wound closure and who survived through discharge and rehabilitation.

During the 7-year period, 72 patients presented with ruptured AAAs; overall, 53 survived (74%). Delayed abdominal closure was used in 20 patients. Discounting 9 intraoperative deaths, gross survival was 81% (35/43) in the immediate closure group and 80% in the delayed closure group (16/20). Three patients were treated with delayed abdominal closure after complex mesenteric revascularization procedures. Two survived and were included in the analysis of long-term outcomes. Five of the patients treated