Endovascular TAA Repair Bests Open Surgery

BY MITCHEL L. ZOLER

HOLLYWOOD, FLA. — Endovascular repair of ruptured thoracic-aortic aneurysms led to significantly better outcomes than did open surgical repair in a comparison of two nonrandomized series of patients.

Emergency endovascular repair of 52 patients with ruptured thoracic aortic aneurysms (TAAs) yielded a 71% survival rate 30 days post procedure and 50% survival after 1 year, Dr. Manish Mehta said at ISET 2009, an international symposium on endovascular therapy. The patients were treated during 2005-2007 at Albany (N.Y.) Medical Center.

By contrast, the 69 patients who underwent emergency open surgical repair of a ruptured TAA during 2004-2007 had a 30-day survival rate of 45% and a 1-year survival rate of 35%. The difference was statistically significant at both follow-up times, said Dr. Mehta, a vascular surgeon and director of endovascular services at the Institute for Vascular Health and Disease at the medical center.

Open repair was used only for emergency TAA repair at the center during 2004. Endovascular repair was first used for these patients in 2005, in 29% of all cases. As the surgical staff became comfortable doing endovascular repairs, the rate of emergency cases treated this way rose to 67% in 2006, and to 90% in 2007.

Endovascular repair of ruptured TAAs also led to significantly fewer cardiac and pulmonary complications. This method "may increase our ability to treat patients with significant comorbidities who might otherwise go untreated," Dr. Mehta said, stressing the need for longer follow-up of these patients to assess the procedure's efficacy.

Endovascular TAA repair is the standard approach for elective treatment, but not for emergency rupture repairs. The few published reports of endovascular repair of ruptured TAAs have involved small cohorts. Problems associated with emergency TAA repair include limited training opportunities, the need for a variety of stent-graft sizes, and the complex anatomies of thoracic aorta and associated vessels that may be ill suited to endovascular stent graft placement.

Slightly more than half of the patients in the open-surgery and endovascular groups were men, with an average age of 73 years. But the endovascular patients had significantly more comorbidities: a 65% prevalence of coronary artery disease, 69% hypertension, 16% chronic renal insufficiency, and 21% chronic obstructive pulmonary disease.

Endovascular repair was associated with a 324-cc reduction in blood loss, vs. more than 2 L in the open-surgery group, as well as significant reductions in average number of blood units transfused and procedure time.

During the first 30 days after repair, the endovascularly treated patients had a significantly lower incidence of myocardial infarction, need for tracheotomy, and total neurologic complications (see table), Dr. Mehta said. The incidence of ischemic colitis or colectomy, renal failure, secondary infections, and stroke was similar in the two series. ■

30-Day Outcomes for Repair of Ruptured TAAs

	Endovascular repair (n = 52)	Open surgical repair (n = 69)
Survival	71%	45%*
Myocardial infarction	10%	27%*
Need for tracheotomy	8%	26%*
All neurologic complications	6%	16%*
Renal failure	5%	9%
Secondary infection	12%	16%
Stroke	2%	7%
Ischemic colitis or colectomy	2%	4%

* Statistically significant difference between treatment groups
Source: Dr. Mehta

ELSEVIER GLOBAL MEDICAL NEWS

Drug-Eluting Tibial Stents Improve Patency, Limb Salvage

BY MITCHEL L. ZOLER

HOLLYWOOD, FLA. — Drug-eluting stents placed in tibial arteries had 73% patency at 2 years' follow-up and led to an 86% limb salvage rate after 26 months in a series of 52 patients.

"Drug-eluting tibial stents are a viable option for the endovascular treatment of limb-threatening ischemia," Dr. William D. McMillan said at ISET 2009, an international symposium on endovascular therapy.

This is the largest reported series of patients receiving drug-eluting stents in tibial lesions, with the longest follow-up, said Dr. McMillan, noting the "acceptable" long-term patency and "reasonable" limb salvage rates.

The patients, who received one or two paclitaxel-eluting stents in tibial lesions, were part of a series of 240 consecutive patients who underwent endovascular treatment for tibial occlusions during June 2004–June 2008. In this series, all tibial lesions were first treated with balloon angioplasty; a stent was placed if angioplasty failed to produce satisfactory patency. Drug-eluting stents were used if the lesion was smaller than 3 cm, to avoid placing them end to end, said Dr. McMillan, a vascular surgeon in Minneapolis. Bare-metal stents were used for longer lesions, up to 6-8 cm. Lesions longer than that were treated with open surgery.

Dr. McMillan and his associates began using drug-eluting stents because of concern about the rate of hyperplasia with bare-metal stents, especially in tibial arteries. For this series, they used the paclitaxel-eluting coronary stent (Taxus) for consistency, and to simplify their interpretation of patency outcomes, said Dr. McMillan, who reported having no financial conflicts.

Drug-eluting stents are a viable option for patients who have limb-threatening ischemia.

DR. McMILLAN

The patients (65% male, average age 73 years), received a total of 62 paclitaxel-eluting stents. Comorbidities were common: 87% had hypertension, 63% had diabetes, 48% smoked, and 19% were on dialysis. Their Rutherford class ranged from 4 to 6. In addition, 42% had gangrene, 40% had a nonhealing foot or leg ulcer, and 18% had pain in the limb at rest. The specific vessel involved was the posterior tibial in 32% of patients, peroneal in 31%, tibioperoneal in 24%, and anterior tibial in 13%.

Forty-eight (92%) of the patients required concurrent endovascular treatment of a more proximal lesion, most often in the superficial femoral and popliteal arteries.

After stenting, patients were routinely followed with duplex ultrasound and by their ankle-brachial index. Eighteen underwent peripheral arteriography during follow-up. Median follow-up was 14 months, with a range of 1-48 months. Overall patient survival during 2 years following treatment was 65%, a "surprisingly poor" rate, Dr. McMillan said. ■

Carotid Stents Questioned for Radiation-Induced Stenosis

BY BRUCE JANCIN

TUCSON, ARIZ. — Carotid angioplasty and stenting appear to be linked to a disproportionate rate of in-stent restenosis in patients with radiation-induced stenosis.

Radiation-induced stenosis was the only high-risk characteristic associated with less-than-optimal outcomes in a retrospective study that deemed the procedure a safe, durable alternative for patients at high risk for endarterectomy, Dr. Susanna H. Shin said at the annual meeting of the Southern Association for Vascular Surgery.

Restenosis occurred in 22% of patients who had radiation-induced stenosis, vs. 4% of other patients.

DR. SHIN

Her study involved 98 patients at anatomically high risk for carotid endarterectomy (CEA) and 132 patients at medically high risk. Anatomically high risk was defined as previous ipsilateral CEA, radical neck dissection, or neck irradiation; medically high risk was defined as multiple comorbidities.

The procedural success rate was 98% in the anatomically high-risk group and 98.5% in the medically high-risk group. Low rates of stroke, MI, and death were noted at 30 days in both cohorts. Stroke occurred in 1.0% of the anatomically high risk group and in 0.8% of the medically high risk group. The 30-day mortality rates were 2.0% and 0.8%, respectively. Stroke-free survival rates at 1 and 2 years were similar in the two cohorts, said Dr. Shin of Eastern Virginia Medical School, Norfolk.

Overall restenosis-free survival at 2 years was 91% in the anatomically high-risk group and nearly 92% in the medically high-risk cohort. Restenosis occurred in 4 (22%) of 18 patients with radiation-induced stenosis and in 3 (4%) of 78 of all other anatomically high-risk patients.

Various stents were used in the Norfolk series, said discussant Peter H. Lin of Baylor College of Medicine, Houston. Recent European studies suggest the patency rate with nitinol-based open stents is worse than with closed-cell stent designs. "I've seen this," Dr. Lin said, adding that closed-cell stents could be applied in patients with certain anatomical risk factors such as radiation-induced stenosis.

Most patients in Dr. Shin's study received open-cell stents under clinical trial protocols.

Dr. Shin disclosed no conflicts; Dr. Lin has received research grants from device manufacturers. ■