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Decrease in Invasive Procedures**

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EDITORIAL

Warning: Side Effects May Include a Decrease in Invasive Procedures

Endovascular procedures have certainly been a tremendous advance, allowing the minimally invasive treatment of diseases throughout the body that previously required “major” surgery. I feel fortunate to have been able to practice these techniques during such an exciting time of innovation. However, patients will want us to progress to even less invasive options in the future, and the ultimate in minimally invasive procedures is no procedure at all. The Stent placement and Aggressive Medical Management for Preventing Recurrent Stroke in Intracranial Stenosis (SAMMPRIS) trial is an example of how the need for an invasive procedure can be obviated by proper medical therapy.¹

Just as our endovascular procedures improve with time, medical therapies improve as well, as demonstrated by the outcomes for patients randomized to medical therapy in SAMMPRIS being substantially better than patients treated with medical therapy in the Warfarin-Aspirin Symptomatic Intracranial Disease trial² a decade earlier. Similar advances in medical therapy for atherosclerosis might be demonstrated in the near future because it is quite possible that a similar result in favor of medical therapy would be found if a randomized study was performed comparing medical therapy with endarterectomy or stent placement for asymptomatic carotid stenosis.

Of course, we must be cautious not to throw the proverbial baby out with the bathwater. Maybe a randomized study shows an overall negative result for a procedure, but that does not exclude the possibility of a benefit from the procedure for a subgroup of patients. SAMMPRIS may have had negative results for angioplasty and stent placement versus medical therapy overall, but it is entirely possible that some subset or subsets of patients within SAMMPRIS would be better treated with angioplasty and stent placement than with medical therapy. Nonetheless, scientific progress in medicine is almost certainly on an inexorable course of replacing many invasive procedures, including minimally invasive ones, with medications.

Acquired vascular diseases like atherosclerosis may be especially amenable to eventual conquering by medicines that treat them at a molecular level. Imagine that there was a single pill that eliminated unruptured aneurysms? An epidemic of aortic aneurysms in turkeys was once largely eradicated by the administration of the medication reserpine,³ so it is certainly conceivable that a single drug could treat human cerebral aneurysms in the near future. Combine that with successful

pharmacologic prevention and/or treatment of atherosclerosis and the demand for endovascular treatment of cerebrovascular diseases would plummet. It is not unreasonable to expect such a major paradigm shift within the course of our careers. Consider that in the time since I graduated from medical school, our understanding of peptic ulcer disease has completely changed and it is now effectively treated with antibiotics. It is generally unwise in medicine to assume that you will be performing the same procedures throughout your career. Rather, we should consider that it would be extremely disappointing if the treatment of cerebrovascular diseases changed very little in the remaining years of our lives.

Physicians carry their proverbial hammers and thus may unfortunately see their patient’s condition as a proverbial nail. We physicians organize ourselves into societies on the basis of common interests, which are sometimes a particular “hammer.” The inherent bias of physicians and their organizations is nothing new, but it is worthwhile to occasionally remind ourselves of how that bias impacts our view of the treatment of diseases now and in the future. Such a bias can significantly cloud our ability to imagine, develop, and/or promote a better treatment that is not a neurointervention. I have heard some neurointerventionalists suggest, after hearing the results of the SAMMPRIS trial, that the wrong intervention was performed or it was performed by the wrong people or on the wrong patients. As with any trial, valid criticisms of SAMMPRIS can be made, but the reflexive impulse to look for the reasons why we failed to show that endovascular intervention is the best therapy completely distracts us from the impressive outcomes achieved by medical therapy alone. From a patient’s perspective, the improved outcome with medical therapy is good news. We have grown accustomed to expanding applications of endovascular therapies as they have replaced open surgery. However, that era of expansion of endovascular therapies may be reaching a peak, and we probably now need to become accustomed to medical therapies occasionally replacing endovascular therapies.

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