Welcome to the April edition of *Vascular Disease Management*. There are excellent interviews and articles – each worthy of editorial commentary – in this issue. I have chosen to comment on Dr Sultan and colleagues’ article on the Streamliner Multilayer Flow Modulator for the treatment of thoracoabdominal and visceral aneurysmal diseases. This article outlines an entirely new concept in the treatment of aneurysms.

Historically, endovascular treatment of aneurysmal pathology utilized a physical barrier, typically a polytetrafluoroethylene covering on a stent frame, to “seal” aneurysms. The United States Food and Drug Administration (FDA)-approved implants that have been utilized are effective in many cases and have long-term outcome data. These implants have helped to revolutionize the treatment of aneurysms, lessening the need for open surgical repair. Unfortunately, there are limitations of the presently approved devices, as described by Sultan in this article. Perhaps the greatest limitation of present implants is that side branches are occluded. Although newer-generation fenestrated covered stent-grafts allow protection of major branches in many cases, implantation is more difficult and small branches can’t be protected.

In this issue of *Vascular Disease Management*, Dr Sultan reviews the data from multiple reports on a potentially revolutionary new concept for the treatment of thoracoabdominal aortic aneurysms, the Streamliner Multilayer Flow Modulator device from Cardiatis. This technology has been the source of great debate among physicians treating aortic aneurysms, with polar-opposite entrenched positions and little middle ground between the advocates and detractors.

The implants utilized in this report are constructed of multiple layers of interlocked bare-metal cobalt-alloy stents to create a multilayered stent-graft that does not exclude blood flow like traditional stent-grafts. Conceptually, the Streamliner Multilayer Flow Modulator stent-grafts are designed to create a physiological solution rather than a physical barrier. These devices alter blood flow from turbulent to laminar, inducing positive shear stresses that promote graft endothelialization and thrombosis of the aneurysmal sac. These devices can be placed across major and minor side branches with low rates of side-branch occlusion if there is no significant
obstructive disease or if obstructive side-branch disease has been previously successfully treated. Dr Sultan extensively reviews the data that have been published utilizing this technology, pointing out limitations and attributes. He points out those circumstances where this class of implants should not be utilized and describes proper implantation technique to improve outcomes. He reports his positive data with these devices and explains some of the prior negative reports.

These implants have not been utilized long enough to have definitive long-term data at this time. The data reported by Dr Sultan in this article are quite promising, particularly in cases of aortic dissection, where conventional therapies have had significant complication rates, predominantly resulting from occlusion of side branches. Will this technology lead to adequate sealing of dissecting aneurysms with less risk of paraplegia and end-organ damage?

The debates about the Streamliner Multilayer Flow Modulator stent-grafts are not over and will not be resolved for years to come. This is a revolutionary new idea that defies conventional wisdom. Revolutionary new ideas are always highly controversial and are rarely greeted with enthusiasm. Often, those that espouse these new ideas suffer great professional and personal criticism. Thankfully, there are pioneers who create and evaluate potential new therapies. These new ideas often fail, but some forever change the course of medical therapy. Only time and further study will determine the impact of these devices.