

CLINICAL EXPERIENCE WITH ABDOMINAL AORTIC ANEURYSM ENDOGRAFTS

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Surgical treatment of abdominal aortic aneurysms (AAA) is a highly invasive, traumatic, and expensive procedure. Transluminally deployed stent grafts, or endografts, offer great promise in treating this deadly condition with much less trauma and cost. Clinical experience with these devices has demonstrated that patient selection and endograft design are key determinants of success. Failures associated with endografts have been classified in four categories. Type I: Leaks at the proximal or distal ends of the device that lead to aneurysm sac pressurization. Type II: Sac pressurization through collateral circulation. Type III: Leaks at the junctions of endograft components or intermediate structural failure. Type IV: Continued graft material porosity. The purpose of this presentation is to aid the understanding of the importance of imaging findings and treatment strategies for type

I and III endoleaks. Although the appearance of these leaks on computed tomography can be unremarkable and similar in appearance to type II endoleaks, it is critically important for the clinician to make the correct diagnosis, as these endoleak types signify an incompletely treated aneurysm. Once the diagnosis of a type I or III endoleak is made, the next step is to identify the cause of the endoleak. Incomplete initial graft expansion, further arterial dilation, endograft migration, component separation, and tears within the graft fabric are all possible causes of type I and III endoleaks. A combination of computed tomography, plain film radiography, and diagnostic angiography helps to identify the underlying cause of the complication. Once all of these factors are known, a decision has to be made of whether the endoleak can be treated through additional endovascular means or if open surgical revision is necessary to treat the aneurysm.