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The typically orificial location of renal artery occlusive lesions, coupled with the relative intolerance of the kidney to ischemia and embolization, renders the endovascular treatment of these vessels perhaps the most technically challenging of all endovascular procedures. Comprehensive catheter/guidewire skills are essential for safe performance of these procedures as the margin for error is small. Nonetheless, since operative management of these conditions also carries substantial risks, renal angioplasty, with or without stenting, has earned a prominent place in the armamentarium of options to revascularize affected kidneys. The role for endovascular treatment of these vessels is further enhanced by the significant reduction in need for operative revascularization of aortoiliac occlusive and aneurysmal disease that has occurred as a consequence of advances in other endovascular therapeutic modalities such as aortoiliac stenting and stent grafting. In other words, operative renal revascularization justified by the philosophy that “we’re in there anyway, we might as well just bypass the stenosis” is becoming less common as the need to “be in there anyway” diminishes. Therefore, the vascular surgeon desiring to provide comprehensive vascular care to his patients needs to master the endovascular techniques involved and thoroughly understand the potential pitfalls that may be encountered. The following “Top 10 Tips for Renal Angioplasty” will allow vascular surgeons to treat a wide variety of renal occlusive lesions with the greatest possible efficacy and fewest complications.

10. Perform routine renal angioplasty in a dedicated angiographic facility for optimal image quality and ease of acquisition.
9. Make the extra effort to obtain optimal projections to demonstrate the anatomy accurately, particularly at the origin of the renal artery and at any bifurcations adjacent to the stenosis.
8. “Negate” the effect of severe iliac tortuosity by using a long sheath, perhaps even 1F size larger to minimize wall friction between the guiding catheter and the sheath.
7. Switch to 0.356 mm (0.014 inch) guidewire systems for their superior flexibility and low crossing profiles.
6. When otherwise equivalent, preferentially use stents approved for renal use over off-label stenting to encourage the industry to pursue appropriate labeling of their devices by the US Food and Drug Administration.
5. Understand the full range of guiding catheter shapes, handling characteristics, and proper use.
4. Adopt a rapid exchange technology to minimize guidewire movement and potential renal artery or parenchymal perforation.
3. Know how to perform CO₂ and gadolinium angiography when needed.
2. Use the brachial approach liberally to facilitate the treatment of angulated renal arteries.
1. Just don’t mess it up!