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CLINICAL IMAGES

Role of Dynamic Roadmapping in Renal Denervation Procedures

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Dynamic roadmapping (DRM) (Dynamic Coronary Roadmap; Philips) offers a real-time, dynamic overlay of the coronary tree on fluoroscopy. Once the roadmap is automatically generated during angiography, it can be used for navigation during percutaneous coronary intervention procedures. However, it may have other interesting applications. We present the first description—to our knowledge—of the role of DRM for renal denervation (RDN).

RDN is a minimally invasive procedure that involves a catheter-based ablation of the sympathetic nerves within the renal artery. DRM projects a highlighted renal angiogram superimposed on a live 2-dimensional fluoroscopic image, creating a colored roadmap **(Figure, A & B)** that adjusts automatically with a single 5-mL injection of contrast medium. It also provides continuous visual feedback on the positioning of the wire **(Figure, C)** and the catheter **(Figure, D)**. The use of this coronary tool allows for the reduction of both radiation doses and contrast volume, providing improved safety for patients with resistant hypertension, especially for those at higher risk of contrast-induced nephropathy.

RDN is a technically simple procedure, however, the advancement of the Symplicity-Spyral catheter (SCC) (Medtronic) **(Figure, E)** can sometimes be challenging due to its helical shape and stiffness, mainly in angulated or tortuous branches. In these cases, coronary techniques such as buddy wire **(Figure, F)** or the use of guide catheter extension **(Figure, G [arrow])** can improve the guiding catheter stability and support, and facilitate SCC navigation to the radiofrequency application site.

With these clinical images, we want to highlight the use of DRM as an additional tool for RDN in order to reduce contrast and radiation, as well as the usefulness of computed tomography to overcome difficulty in SSC deliverability.

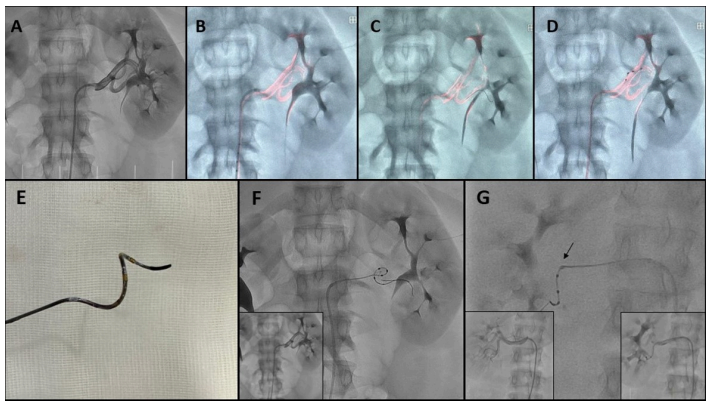

Figure. Highlights of the use of dynamic roadmapping as an additional tool for renal denervation in order to reduce contrast and radiation, as well as the usefulness of coronary techniques to overcome difficulty in Symplicity Spyral catheter (SCC) (Medtronic) deliverability. **(A)** Renal angiogram (RA). **(B)** Colored RA roadmap. **(C, D)** Continuous visual feedback on positioning of the wire and catheter. **(E)**

SCC. **(F)** RA and buddy wire technique. **(G)** RA with guide catheter extension system **(arrow)**.

Affiliations and Disclosures

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