Laparoscopic-based renal denervation for treating resistant hypertension:a innovative technology

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Abstract:

Resistant hypertension has become a difficult point in the control of hypertension because of the difficulty in controlling blood pressure well. Drug therapy has been an important method to control hypertension for many years, but in recent years, interventional methods represented by renal denervation (RDN) have provided new opportunities for the treatment of resistant hypertension. RDN releases energy through the ablation catheter and acts on the sympathetic nerve fibers on the vascular wall around the renal artery, thereby reducing the activity of the renal sympathetic nerve, blocking the increased activity and persistence of the sympathetic nerve, and thus it plays an important role in blood pressure control, especially resistant hypertension. Previous methods of performing RDN through the intima of the renal artery may damage the structure, increasing the risk of renal atherosclerosis. Therefore, taking this factor into account, in order to reduce the direct damage of the intima of the renal artery by radiofrequency energy, our team tried to implement RDN from the adventitia of the renal artery with the help of current mature laparoscopic technology and engaged in relevant research for decades, including animal experiments and clinical trials. On the basis of these studies, we have preliminarily verified the safety and effectiveness of this technology in the treatment of resistant hypertension. This article mainly introduces our team's innovative technology of laparoscopic-based RDN from the adventitia of renal artery for the treatment of resistant hypertension.

Keywords: Resistant hypertension, renal denervation, Progression, laparoscopic