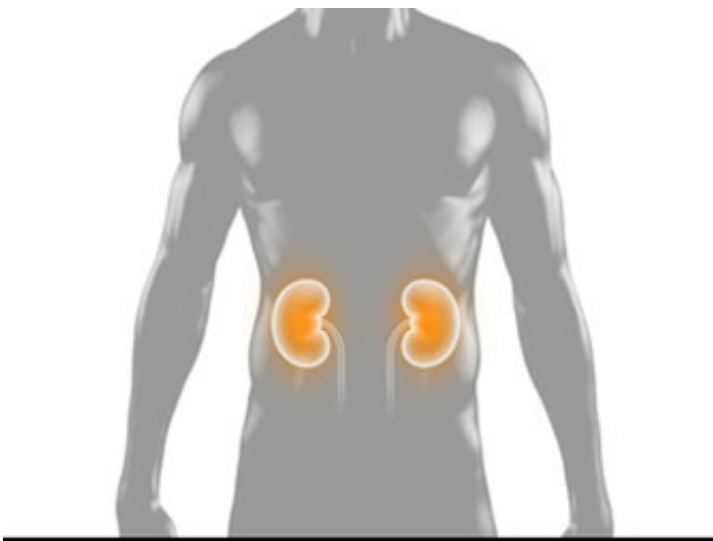


New surgical technique preserves kidney function following tumour removal

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Renal cell carcinomas are one of the most common types of cancer. In order to preserve its wide range of functions, every effort is made not to remove the entire kidney, but rather just a portion of it. A surgical method that preserves long-term renal function has now been carried out successfully for the first time in the Department of Urology at the MedUni Vienna and Vienna General Hospital.

A surgical ultrasound device is used that was previously used for liver cell carcinomas. In the pilot study, recently published in the highly respected *World Journal of Urology*, this method has now been applied

successfully at the Department of Urology at the Medical University of Vienna for the first time to the surgical treatment of complex renal tumours.

Patients benefit twice from the new technique: during the operation itself, the risk of bleeding and complications is lower. In the long term, [renal function](#) is preserved and there are no long-term consequences of renal impairment.

Until now, "cold ischaemia" has been used during the removal of renal tumours. With this method, the blood vessels supplying the kidney are clamped and the kidney is cooled. This is essential since the kidney bleeds very heavily when incised - and in humans, around 15 to 20 per cent of the entire blood supply is located in the two kidneys. "Cold ischaemia", however, has a serious disadvantage: the clamping of the vessels damages the renal vessels, significantly increasing the long-term risk of [renal impairment](#).

Solution for a major surgical problem

This does not happen in procedures using the CUSA (Cavitron Ultrasonic Surgical Aspirator) ultrasound device, as study leader Shahrokh Shariat, Head of the University Department of Urology at the MedUni Vienna and Vienna General Hospital, explains: "With the CUSA [ultrasound device](#), the kidney continues to be perfused with blood during the surgical procedure. As our study shows, the new surgical technique allows renal function to be fully maintained, even though we can achieve the same oncological and surgical results as we do with clamping the organ. This has enabled us to resolve one of the major surgical problems of the last two decades."

Important renal functions remain intact

The problem of clamping and associated long-term damage only became apparent with the advances achieved in imaging with ultrasound and computed tomography. As a result of these advances, around 80 per cent of renal tumours are now detected so early that kidney-sparing treatment is possible without removal of the entire organ. The preservation of ideally both kidneys is important because the kidney performs a range of vital functions which diminish with age and as a result of [kidney](#)-damaging conditions such as diabetes and high blood pressure.

More information: "Partial nephrectomy driven by cavitron ultrasonic surgical aspirator under zero ischemia: a pilot study." *World J Urol.* 2015 May 3. www.ncbi.nlm.nih.gov/pubmed/25935329

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