1141 Robotic Assisted Surgery in Horseshoe Kidneys: A Safety and Feasibility Multicentre Case Series

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Introduction: Horseshoe kidneys (HSK) are the most common renal fusion abnormality. However, they are only present in 0.2% of the population. Due to anatomical variation in vasculature, ectopia and malrotation, surgery has traditionally been performed via an open approach. We aimed to assess the safety and feasibility of robot-assisted surgery for HSK.

Method: Six patients (four female, two male) with HSKs were operated on between 2016 and 2019 across two high-volume centres by high-volume surgeons. All operations were robot-assisted, with three partial nephrectomies and one nephroureterectomy for renal masses and two benign nephrectomies for non-functioning kidneys. 3D reconstruction using CT renal angiograms was used to help identify vasculature and tumour location (where appropriate).

Results: The median age was 53 years (IQR 47-58.3) and the median BMI was 25 (IQR 25-25.8). Median tumour size in the four patients with renal masses was 35.5 mm (IQR 25.3-44.8). Median console time was 120 minutes (IQR 117-172.5) and the median estimated blood loss was 150 mL (IQR 112.5-262.5). The median pre-operative eGFR was 76 (IQR 70-86.5) and median post-operative eGFR was 65.5 (IQR 59.3-80.8). All operations were uneventful, there were no perioperative transfusions and no complications reported. Length of stay was two days for all patients.

Conclusions: We report the largest series of mixed robotic-assisted surgery on HSK. Robotic surgery is safe and feasible for HSK in high-volume centres with acceptable perioperative outcomes. Further prospective, longer-term, multi-centre studies are required to evaluative if robotic surgery for HSK is superior to open surgery.