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Introduction & Objectives: Horseshoe kidney is a renal fusion anomaly, which occurs in around 1/400 of the population. Traditionally, surgery to horseshoe kidney is often done in open fashion. We present a case series of patients with robotic horseshoe kidney surgery. We also utilise 3D reconstruction of CT scans in all cases to aid us in planning and would like to share our learning.

Materials & Methods: A total of 4 cases were performed between June 2017 and October 2018. Two were partial nephrectomy, one was nephroureterectomy and one was benign nephrectomy. 3D reconstruction was delivered (innersight ltd, London, the UK) using CT renal angiogram to have better vascular anatomy.

Results: All underwent successful operations. The average age of patients was 55.5 (43-80) and BMI was 26.5 (25-30). Estimated mean blood volume was 240 ml (range: 10 ml - 500 ml). Every patient went home on day 2. The average pre-operative eGFR was 71.3 and average post operative day 1 eGFR was 62.8. Nil complication was noted. A mean decline of eGFR was 8.5 at immediate post-operative period and 4.5 at latest follow up.

Conclusions: Our series suggested that robotic surgery on Horseshoe kidney is feasible. Reconstruction with 3D model helps planning of the surgery especially the vascular anatomy. Port placements are slightly more medial and dividing the isthmus with vessel sealer was helpful.