

Our data do not show a learning curve for distal TIP, analyzing the first 50 cases versus those subsequently.<sup>3</sup> However, we did publish outcomes for proximal TIP showing a significant reduction in complications following technical modifications made when periodic reviews showed need to improve the operation.<sup>4</sup>

These observations support several conclusions. First, reconstructive surgeons need to know their own results. Resistance to change largely derives from confidence that outcomes are good, but, as Koyle points out, memory is never as reliable as data! Simply recording complications into a spreadsheet when they are diagnosed makes it easy for individual surgeons to determine when there is need for technical improvements. Second, the algorithm for hypospadias repair should emphasize few techniques so that surgeons can master their nuances. For example, we repair all cases using either TIP, inlay, or 2-stage grafts. Third, the small number of proximal cases and their high complication rates strongly argue for subspecialization – with each major centre designating a single surgeon to do these operations. Finally, surgeon educators should compare outcomes of their recent graduates to their own to be certain their teaching is effective.

It is not enough to simply do a lot of cases over time and expect results to improve. Rather, it is necessary for individual surgeons to do a quality assessment of their practice to be certain that the 10 000 hours Koyle refers to are being spent performing the task optimally!

**Competing interests:** Dr. Snodgrass and Dr. Bush declare no competing financial or personal interests.

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# Robot-assisted partial nephrectomy: Excellent results even in more complex renal tumours

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Robot-assisted partial nephrectomy (RAPN) has been recently developed and proposed as the natural evolution and simplification of the laparoscopic approach.<sup>1</sup> The advantages offered by the daVinci (Intuitive Surgical, Inc.) platform can help surgeons to perform a precise tumour excision with an adequate margin of resection, simplifying the reconstruction steps of the procedure, above all in the treatment of complex or large renal tumours.<sup>2,3</sup> The most important advantage is a reduction of the hilar clamping time,<sup>4,5</sup> which minimizes renal function impairment, since the warm ischemia time (WIT) is the most important parameter that affects renal function after surgery.<sup>6</sup> Ploussard and colleagues recently reported an interesting single-institution Canadian experience of 65 consecutive RAPNs performed between 2011 and 2013 by 2 surgeons with prior experience in robot-assisted radical prostatectomy or pure laparoscopic partial nephrectomy.<sup>7</sup> The mean tumour size was 3.9 cm and, remarkably, 47.7% of those masses were >4 cm in maximum diameter. The tumour complexity was evaluated by the R.E.N.A.L. nephrometry score.<sup>8</sup> The median R.E.N.A.L. score of the cohort of patients was 8 (interquartile range: 4-11), thus reflecting an intermediate-high surgical complexity. The median WIT, operative time and blood loss were 23.4 minutes, 183 minutes and 150 mL, respectively. Postoperative complications were observed in 16 (24.6%) patients, half of which were major according to the Clavien-Dindo classification. Positive surgical margins were observed in 5 cases (7.7%), and minor impairment of the estimated glomerular filtration rate (eGFR) was observed in the postoperative period. These perioperative outcomes are remarkable, and comparable to those currently reported.<sup>2,9</sup>

The 20-case cut-off, despite the increased complexity of tumours, and decreases in operative time, estimated blood loss and WIT, emphasizes the importance of the learning curve and surgeon experience in determining the quality of outcomes.<sup>10</sup> Furthermore, the simultaneous presence of negative margins, minimal decreases in eGFR and no urological complications, defined as the trifecta rate,<sup>11</sup> was achieved in 56.9% of cases.<sup>7</sup> This result seems quite lower than the value (68%) reported by Hung and colleagues.<sup>11</sup> They used a larger cohort of robotic/laparoscopic partial nephrectomies performed at a high-volume centre by a single experienced surgeon. The trifecta rate in the Ploussard study significantly dropped to 64.3% after the first 20 cases, similarly to those reported by other open or laparoscopic skilled teams.<sup>12,13</sup> This result is encouraging, and emphasizes the safety and feasibility of the robotic approach in partial nephrectomy. We believe that surgeon experience, rather than the surgical technique, is the decisive and foremost factor affecting oncological and functional outcomes after partial nephrectomy. The robotic approach may indeed be the most suitable tool to improve perioperative results, quality of life and patient satisfaction.

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