

PE49 The ERUS curriculum for robot-assisted partial nephrectomy: Structure definition and pilot clinical validation

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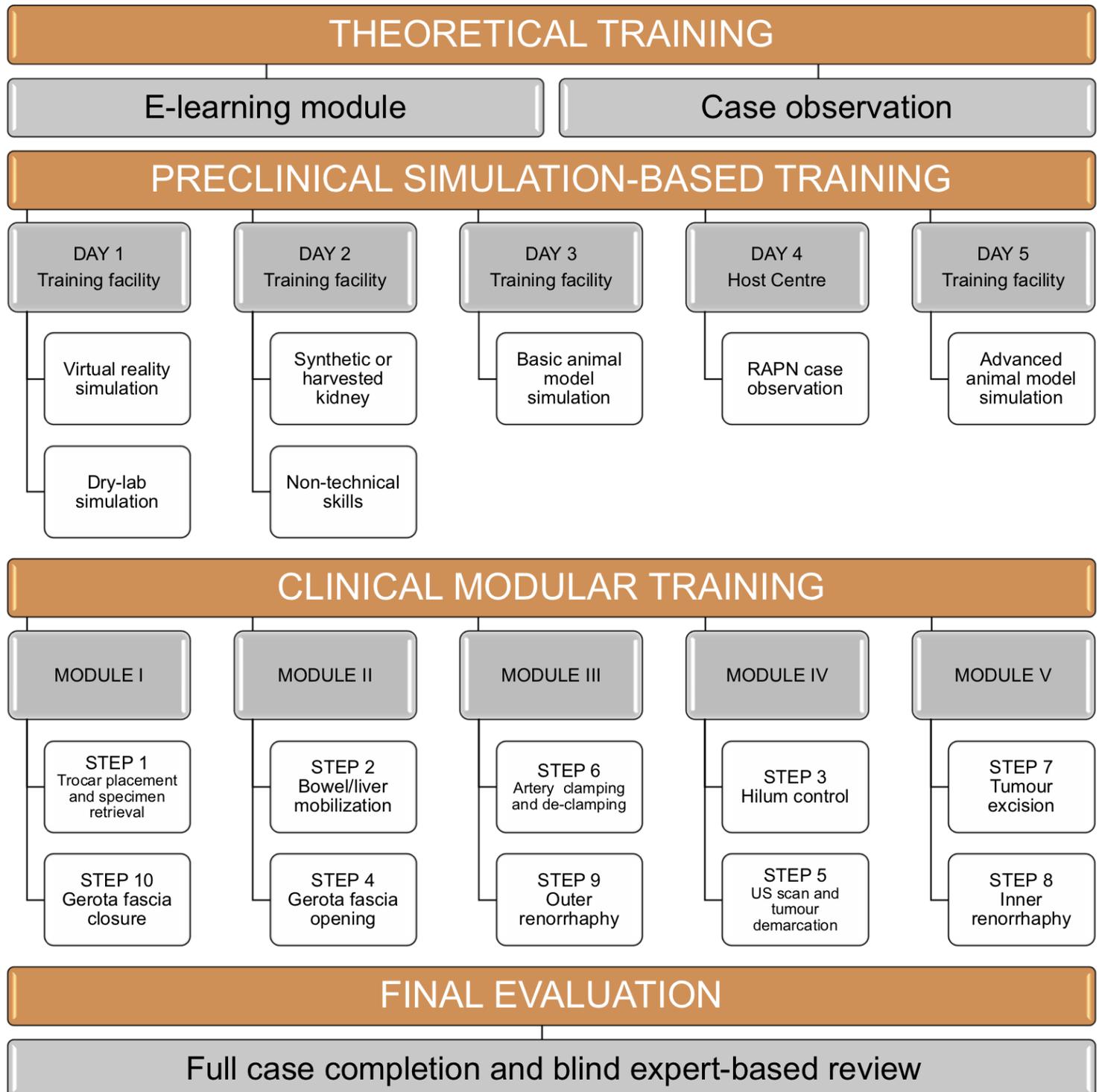
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Introduction & Objectives: No validated training program for robot-assisted partial nephrectomy (RAPN) exists. The aim of the study was to define the structure and provide a pilot clinical validation of a curriculum for RAPN.

Materials & Methods: A modified Delphi consensus methodology involving 27 experts defined curriculum structure. One trainee completed the curriculum under the mentorship of an expert. 40 patients treated with curriculum RAPN (cRAPN) were compared to 160 patients treated with standard of care (sRAPN). To define curriculum structure, consensus was defined as $\geq 90\%$ expert agreement. To investigate curriculum safety, perioperative morbidity, renal function and pathologic outcomes were evaluated. To investigate curriculum efficacy, RAPN steps and modules attempted and completed by the trainee were evaluated. Propensity score-matching identified comparable cRAPN and sRAPN cases. Mann-Whitney, Chi-square tests and linear regression were used to investigate the impact of the curriculum on patient's outcome and the impact of trainee's experience on surgical independence.

Results: Consensus-based key statements defined curriculum structure. No difference was recorded between cRAPN and sRAPN with respect to intraoperative or overall and grade-specific postoperative complications, blood loss, ischemia time, postoperative estimated glomerular filtration rate and positive surgical margins (all $p > 0.05$). Conversely, operative time resulted longer after cRAPN ($p < 0.0001$). The trainee completed all phases of the curriculum and the trainee's experience resulted associated with more steps attempted/completed and increasing complexity of module attempted/completed (all $p < 0.0001$). The limitations of the study are the enrolment of a single trainee at a single institution and the small sample size. Accordingly, the large confidence intervals observed cannot exclude inferior outcomes in case of cRAPN and further study is required to confirm safety.

Figure 1 - Structure of the ERUS curriculum for robot-assisted partial nephrectomy defined by the modified Delphi consensus process.



Conclusions: The ERUS curriculum for RAPN can protect patients from sub-optimal outcome during the learning curve and can aid surgeons willing to start a RAPN program. Patients should be aware that structured training programs can reduce the risk of sub-optimal outcome due to the learning curve of the surgeon.