

Preclinical optimization of a diode laser-based clamp-free partial nephrectomy in a large animal model

Wesley S. Andrade^{1#}, Fenny H. F. Tang^{2,3#}, Antonio C. H. Mariotti¹, Marilia W. Mancini⁴, Ivison X. Duarte⁵, Eric A. Singer^{6,7}, Robert E. Weiss^{2,8}, Renata Pasqualini^{2,3}, Wadih Arap^{2,9*}, and Marco A. Arap^{1,10*}

¹Hospital Sírio-Libanês, São Paulo, São Paulo, Brazil.

²Rutgers Cancer Institute of New Jersey, Newark, New Jersey, USA.

³Division of Cancer Biology, Department of Radiation Oncology, Rutgers New Jersey Medical School, Newark, New Jersey, USA.

⁴Research and Education Center for Phototherapy in Health Sciences (NUPEN), São Carlos, São Paulo, Brazil.

⁵Patologika Laboratory, Aracaju, Sergipe, Brazil.

⁶Rutgers Cancer Institute of New Jersey, New Brunswick, New Jersey, USA.

⁷Section of Urologic Oncology, Division of Urology, Department of Surgery, Rutgers Robert Wood Johnson Medical School, New Brunswick, New Jersey, USA.

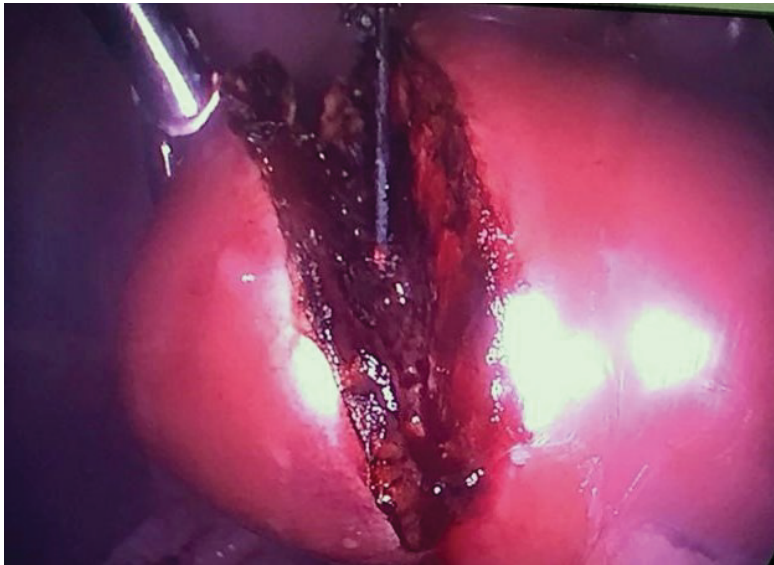
⁸Division of Urology, Department of Surgery, Rutgers New Jersey Medical School, Newark, New Jersey, USA.

⁹Division of Hematology/Oncology, Department of Medicine, Rutgers New Jersey Medical School, Newark, New Jersey, USA.

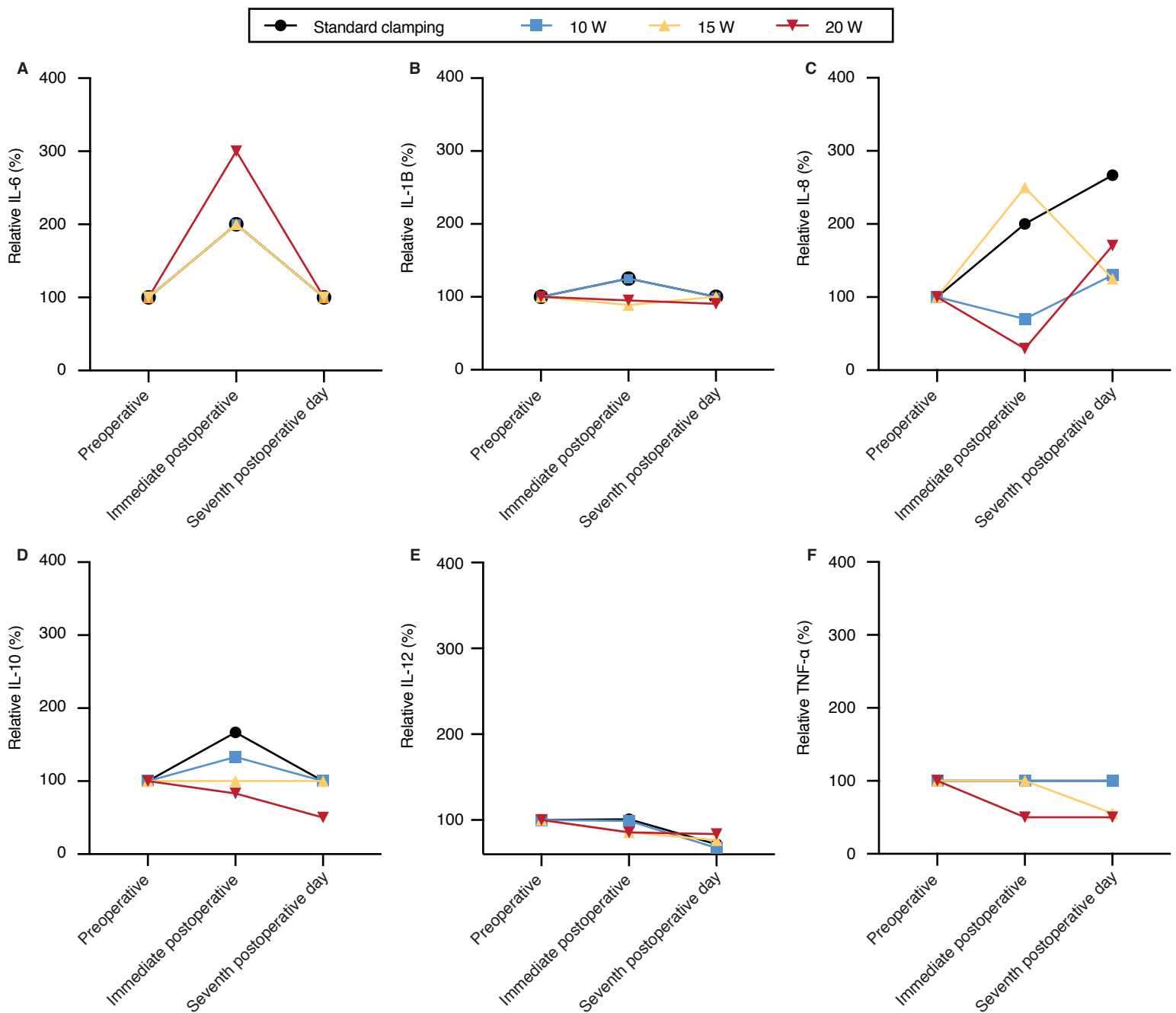
¹⁰Department of Urology, University of São Paulo School of Medicine, São Paulo, São Paulo, Brazil

[#]Wesley S. Andrade and Fenny H. F. Tang contributed equally to this work.

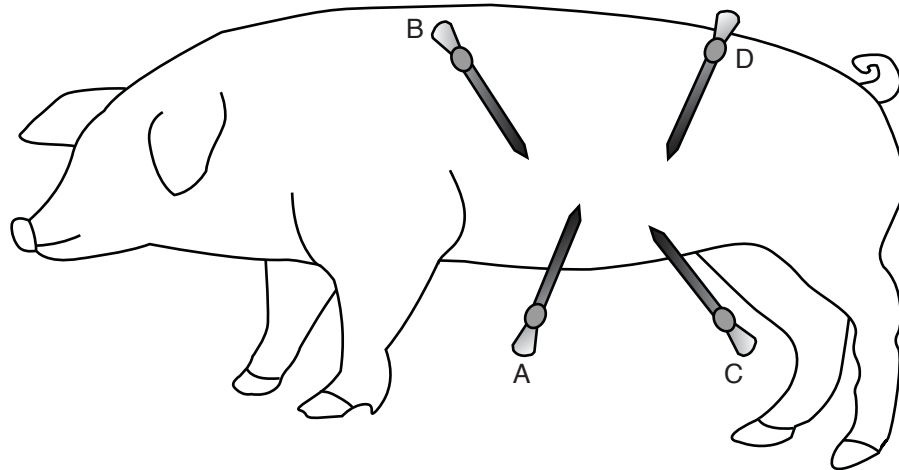
***Address correspondence to:** Dr. Wadih Arap, Rutgers Cancer Institute of New Jersey, 205 South Orange Avenue, Suite B1101, Newark, New Jersey 07101, USA. Phone: 973-972-0366; Email: wadih.arap@rutgers.edu. Or to: Dr. Marco A. Arap, Hospital Sírio-Libanês, R. Dona Adma Jafet, 50, São Paulo, São Paulo 01308-050, Brazil. Phone: +55-11-3255-2933. Email: marcoarap@hotmail.com.



Supplemental Figure 1. Intraoperative aspect of the kidney. A 2 cm renal fragment was excised through laparoscopic partial nephrectomy with the use of the Diode laser at a power of 15 Watts.



Supplemental Figure 2. Panel of inflammatory and acute response cytokines . Analysis of the levels of IL-6 (A), IL-1B (B), IL-8 (C), IL-10 (D), IL-12 (E), and TNF-α (F) in the preoperative, immediate postoperative and seventh postoperative day.



Supplemental Figure 3. Positioning of the laparoscopy trocars. A= 12 mm portal, placed above the umbilical scar (camera); B= 5 mm portal, lateral and superior to the camera portal, in the cranial direction (at the level of the hypochondrium); C= 12 mm portal, placed laterally to the umbilicus in the caudal direction; D= 12 mm portal, placed lateral and superior to the camera portal, in the caudal direction.