Researchers at the University of South Florida have developed a scoring system to predict the perinephric fat surface density (PnFSD) of renal cell carcinoma (RCC) patients.

RCC accounts for 90% of all new renal malignancies. The treatments currently available to patients with suspicious small renal masses include partial nephrectomy, radical nephrectomy, ablative therapies, and active monitoring. Partial nephrectomy surgical dissection is a common choice of treatment. Whether the partial nephrectomy will be easy or difficult heavily relies on the quality and quantity of perinephric fat in that given renal unit. The presence of thick and adherent perinephric fat in renal sparing surgery can complicate the procedure, adding up to an hour of additional surgical time. This complication is due to impaired vision to clearly delineate the surgical boundaries of an underlying renal neoplasm at the surface of the kidney. There is a need for a preoperative procedure to better predict surgical times.

USF inventors have created a method to prospectively assess the ease of surgical dissection of perinephric fat for renal procedures through use of a novel scoring system of computed tomography (CT) images. Accurate pre-operative assessment of PnFSD has far reaching implications as it provides surgeons and patients with data pertaining to the anticipated ease of the upcoming surgical procedure. This assessment can help delineate the best surgical approach, likely outcomes, and aid in pre-operative patient surgical counseling and education.

**ADVANTAGES:**
- Non-invasive
- Allows the physician to better predict complications prior to surgery
- Optimize surgical scheduling
- Improve patient counseling

**Predict Partial Nephrectomy Complications via CT Image Scoring**

**Cross Sectional CT Image With a Scored Outline of Perinephric Fat Measurement in a Patient Who Will Undergo Open Partial Nephrectomy**

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