

prospectively maintained oncology database. Pre-operative imaging, procedure performed, post op morbidity and histology results were reviewed.

**Results:** Nine patients were identified (3 male, 6 female) with a mean age of 67.2 years. Level 1 caval thrombus was identified in seven and level 2 in two patients. The mean tumour size was 8 cm. Tumour subtypes were clear cell type (n = 7), leiomyosarcoma (n = 1) and chromophobe (n = 1). The IVC was closed directly in 8 patients and 1 patient underwent PTFE graft IVC reconstruction. Negative margins were present in 7 with two patients having a positive renal vein margin. The median length of stay was 7 days. Blood transfusion was required in five patients. There were no grade III or higher morbidities and no mortalities.

**Conclusion:** Resection of renal tumours involving the IVC is a complex but safe procedure when performed by appropriately trained specialists. Such patients should be referred for MDT assessment in specialist centers. Indication for resection are not confined to clear cell carcinoma.

### Utility of nephrometry score in predicting peri-operative complications at partial nephrectomy and tumour biology

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**Introduction:** Nephrometry scores are used to predict the feasibility of partial nephrectomy (PN) for renal tumours. It stratifies masses by complexity. Increasing scores correlate with more aggressive tumour biology, more challenging resection and peri-operative complications. We evaluated the predictive value of the R.E.N.A.L. nephrometry scoring system in a contemporary Irish cohort of PN patients.

**Methods:** We performed a multi-institutional retrospective analysis of patients undergoing PN by two consultant urologists from 2016 to 2018 inclusive. PN was performed by open, laparoscopic and robot assisted techniques. We calculated nephrometry scores using univariate analysis to assess its ability to predict peri-operative complications and tumour grade.

**Results:** 128 patients underwent PN during the study period. 36% (N=47) had low complexity score, 60% (N=75) had medium complexity and 4% (N=6) high complexity. On histopathological analysis, benign pathology was identified in 19%, 10% and 50%, low grade (ISUP1/2) pathology in 42%, 55% and 17% and high grade (ISUP3/4) pathology in 25%, 23% and 33% in the low, moderate and high complexity tumour groups respectively.

The rates of peri-operative complications (urinoma and peri-nephric collection) were 6%, 9% and 15% in the low, moderate and high complexity groups respectively. There was no statistically significant difference in tumour grade across groups. While the higher complexity masses were associated with an increased risk of peri-operative complications this did not reach statistical significance.

**Conclusion:** The R.E.N.A.L. nephrometry score did not predict tumour pathology but did appear to predict peri-operative complications. This was not statistically significant given the small group size.

### Evaluation of the Bosniak Classification System in an Irish Patient Cohort

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**Introduction:** Cystic renal disease is very common and differentiating between benign and malignant lesion remains a major challenge despite advances in cross-sectional imaging [1]. The Bosniak classification system, which quantifies the risk of malignancy in cystic renal masses, is widely used to direct patient management. The objective of this study was to examine our experience of the Bosniak classification system and assess its effectiveness.

**Methods:** We performed a retrospective analysis of all patients diagnosed or treated for a complex renal cyst from 2014 to 2016 in Beaumont and Connolly Hospitals. The surveillance cohort were assessed for radiological evidence of progression. The surgical cohort's Bosniak classification was compared to final pathology.

**Results:** One hundred and forty-five patients were identified, of which 21 were excluded due to a follow-up time of ≤6 months and/or a lack of contrast enhanced imaging. The surveillance cohort, comprised of 96 patients, had an average of 34 months surveillance. Their cysts were classified as follows: Bosniak II (n = 26), IIF (n = 60) and III (n = 10) cysts. Upstaging occurred as follows: Bosniak II 2/26 (8%), IIF 2/60 (3%), III 4/10 (40%). In the surgical cohort (n = 34), malignancy was identified in 1/2 (50%) Bosniak IIF lesions, 10/12 (83%) Bosniak III lesions and all 20 (100%) Bosniak IV lesions.

**Conclusion:** Similar to other publications we found that surveillance is a safe approach for Bosniak IIF lesions with only 3% demonstrating radiological progression. [2] Our series supports intervention in fit patients with Bosniak III and IV lesions, with malignancy rates of 83% and 100% respectively.

### References

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### The evolution of the surgical management of kidney cancer: A single centre experience

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**Introduction:** Despite the widespread acceptance of minimally invasive surgery (MIS) for renal cell cancer, open surgery retains a role for selected complex cases. We reviewed patterns of surgery for kidney cancer cases in a single institution.

**Methods:** The hospital in-patient enquiry system was used to identify all kidney cancer surgeries performed between January 2009 to December 2018. Tumour and patient characteristics were analysed in combination with type of surgery performed.

**Results:** 347 patients underwent operative management for renal cancer. The average age at diagnosis was 64 years, and the average length of stay was 4.2 days and 7.3 for MIS and open surgery respectively.

A total of 195 radical nephrectomies (open = 100, laparoscopic = 95) and 128 partial nephrectomies (open = 69, laparoscopic = 59) were performed. A total of 24 nephroureterectomies were performed for upper tract TCC (open = 8, laparoscopic = 16) the majority of laparoscopic nephroureterectomies were performed in the last 3 years (87%). There is a steady decrease in the proportion of open surgeries performed from 97% of cases in 2009 to just 24% in 2018, with a corresponding increase in MIS.

No changes in tumour patterns were seen during the same time period.

**Conclusions:** MIS now dominates the operative management of kidney cancer, with the use of open surgery becoming reserved to complex cases. This may present significant challenges for the necessary training for open surgery.

**Gallium<sup>68</sup> PSMA PET imaging impacts decision making for the management of patients with prostate cancer: results from a prospective study**

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**Introduction:** Ga<sup>68</sup> PSMA PET has a higher sensitivity for detecting metastatic disease than conventional imaging (1). It has particular benefit in the setting of biochemical recurrence when considering

salvage therapy and is now recommended (2). Ga<sup>68</sup> PSMA PET was introduced at our institution in February 2019. We aimed to assess how it influenced decision-making.

**Methods:** A prospective study of Ga<sup>68</sup> PSMA PET usage was commenced in February 2019. The age, PSA, International Society of Urological Pathology (ISUP) prognostic group, primary treatment and the proposed likely management based on conventional imaging were documented before discussion at a multi-disciplinary team meeting. The primary outcome was the impact on management.

**Results:** Twenty-eight Ga<sup>68</sup> PSMA PET scans were carried out over a two-month period. Mean age was 65.3 years, median PSA was 4.5 (range 0.2–279). ISUP Grades 2, 3, 4 and 5 were 7%, 28%, 32% and 25% respectively. Robotic prostatectomy was the most common primary therapy (35%), followed by external beam radiotherapy (25%) and both radical prostatectomy and radiotherapy (17.5%). Eight patients (28.5%) avoided having salvage radiation to the prostate bed based on Ga<sup>68</sup> PSMA PET imaging. Three patients were deemed eligible for stereotactic radiation for oligometastatic disease enabling them to potentially delay hormonal therapy. Two patients with high risk primary disease were offered radical local treatment based on superior staging information, whilst another was not offered surgery based on a rib metastasis.

**Conclusion:** More accurate imaging with Ga<sup>68</sup> PSMA PET has enabled our institution to make more informed treatment decisions for patients with prostate cancer.

**References**

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