

Minervini A.<sup>1</sup>, Mari A.<sup>1</sup>, Antonelli A.<sup>2</sup>, Bertolo R.<sup>3</sup>, Bianchi G.<sup>4</sup>, Borghesi M.<sup>5</sup>, Cocci A.<sup>1</sup>, Fiori C.<sup>5</sup>, Longo N.<sup>6</sup>, Martorana G.<sup>5</sup>, Mirone V.<sup>6</sup>, Morgia G.<sup>7</sup>, Novara G.<sup>8</sup>, Porpiglia F.<sup>3</sup>, Rovereto B.<sup>9</sup>, Schiavina R.<sup>5</sup>, Serni S.<sup>1</sup>, Simeone C.<sup>2</sup>, Sodano M.<sup>2</sup>, Terrone C.<sup>10</sup>, Carini M.<sup>1</sup>, and Members of the Record Project-LUNA Foundation

<sup>1</sup>Aou Careggi, Dept. of Urology, Florence, Italy, <sup>2</sup>AO Spedali Civili, Dept. of Urology, Brescia, Italy, <sup>3</sup>Ospedale San Luigi Gonzaga, Dept. of Urology, Orbassano-Turin, Italy, <sup>4</sup>Policlinico Di Modena, Dept. of Urology, Modena, Italy, <sup>5</sup>Ospedale S. Orsola-Malpighi, Dept. of Urology, Bologna, Italy, <sup>6</sup>Policlinico Federico II, Dept. of Urology, Naples, Italy, <sup>7</sup>Luna Foundation, Italy, <sup>8</sup>Università Di Padova, Dept. of Urology, Padua, Italy, <sup>9</sup>I.R.C.C.S. Policlinico San Matteo, Dept. of Urology, Pavia, Italy, <sup>10</sup>Azienda Ospedaliera Maggiore Della Carità, Dept. of Urology, Novara, Italy

**INTRODUCTION & OBJECTIVES:** Absence of surgical complications represents an important perioperative goal of partial nephrectomy (PN). The aim of this study is to analyse intra and postoperative complications related to NSS in clinical T1 renal tumours in a wide Italian multicentre dataset and to search for possible predictive factors.

**MATERIAL & METHODS:** Overall, 1075 patients treated with nephron sparing surgery (NSS) for clinical renal tumours between January 2009 and December 2012 were prospectively recorded. Overall, 550 (57%) patients had open NSS, 297 (30.8%) a laparoscopic and 118 (12.2%) a robotic approach. Centres were divided in high and low volume according to the threshold of 50 interventions per year. A description of cT1 cases (n=965) and a uni- and multivariate analysis for surgical complication were performed.

**RESULTS:** Overall, 965 patients were analysed. 4.9% had Intraoperative complications (3% for pleural injuries, 1% for vascular injuries, 0.3% for spleen injuries, 0.6% for other causes). Overall, in 13.3% of patients occur postoperative surgical complications (7.6% surgical Clavien 2 and 3.8% surgical Clavien 3). Overall, 6.4% of patients had postoperative medical complications (3.2% were respiratory, 1.9% were cardiologic, 0.2% were thromboembolisms and 1.1% for other causes).

At multivariate analysis ECOG score  $\geq 1$  (OR 1.9, CI 1.21-3.10, p 0.01), clinical diameter (OR 1.42, CI 0.1.07-1.90, p 0.02), open approach (OR 3.2, CI 1.11-9.30, p 0.03), and estimated blood loss (EBL) (OR 1.01, CI 1.00-1.01, p 0.01) were significant predictive factor of surgical postop complications. Intraoperative complications at univariate analysis were predictive factors for surgical postop complications (p=0.0001), but did not achieve significance at multivariate analysis (OR 2.08, CI 0.94-4.59, p 0.07).

**CONCLUSIONS:** In this study comorbidity status (ECOG score) and clinical diameter of the tumour are the only preoperative significant predictive factors of surgical complications, along with higher EBL and the open approach.

Pre and intra operative variables		Univariate analysis for postoperative surgical complications			Multivariate analysis for postoperative surgical complications			
		No Surgical complications (n=836)	Surgical Complications (n=129)	p	OR	CI 95%	p	
ECOG score, n. (%)	0	595 (89,3%)	71 (10,7%)	<0,001	-	-	0,01	
	≥ 1	241 (80,6%)	58 (19,4%)		1,93	1,21-3,10		
Indication, n. (%)				<0,001			0,08	
	Elective	682 (89,0%)	84 (11,0%)		-	-		
	Relative	109 (82,6%)	23 (17,4%)		1,66	0,89-3,09		0,10
	Absolute	45 (67,2%)	22 (32,8%)		1,97	0,93-4,15		0,07
Clinical diameter (cms), mean (SD)		3,1 (1,3)	3,5 (1,3)	0,01	1,42	1,07-1,90	0,02	
Centre volume, n. (%)	High	621 (88,7%)	79 (11,3%)	0,002	-	-	0,66	
	Low	215 (81,1%)	50 (18,9%)		1,13	0,66-1,93		
Approach, n. (%)				<0,001			0,04	
	Open	452 (82,2%)	98 (17,8%)		3,21	1,11-9,30		0,03
	VLP	272 (91,6%)	25 (8,4%)		1,94	0,64-5,86		0,24
	Robot	112 (94,9%)	6 (5,1%)		-	-		-
EBL (cc), median (IQR)		150 (100-250)	200 (150-300)	<0,001	1,01	1,00-1,01	0,01	
Intraoperative complication, n. (%)	Present	34 (70,8%)	14 (29,2%)	0,001	2,08	0,94-4,59	0,07	
	Absent	802 (87,5%)	115 (12,5%)		-	-		-