

Oncological and functional outcomes in minimally Invasive approach for Kidney Cancer with Venous Thrombus: a multicentric study.

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Introduction

In case of localised kidney cancer (KC) without venous thrombus (VT) minimally invasive (MI) procedure are largely used. However little evidence exists on this approach for the treatment of KC with VT of which the standard treatment remains radical nephrectomy (RN) ± thrombectomy.

Material and Methods

We analysed 120 patients who underwent a MI approach from the International Renal Cell Carcinoma-Venous Thrombus Consortium database with a diagnosis of KC + VT (T stage ≥3a), a multicentre series including 2245 patients. One hundred and ten procedures were laparoscopic whilst 10 were robotic. Primary outcomes were cancer specific survival (CSS), overall survival (OS) and post-operative renal function, evaluated through serum creatinine levels (sCr) and eGFR. Complications were graded using the Clavien-dindo classification and comorbidities with ASA score. Thrombus level was recorded according to the Mayo Clinic Classification.

Table 1. Baseline Feature		Table 2. Intraoperative Feature	
No (%) / Mean (±SD)		No (%) / Mean (±SD)	
Age	66.48 ±11.24	Surgical time (min)	197.05 ±88.35
Male	79 (65.83)	Lymphadenectomy	15 (14.42)
Female	41 (34.17)	Cavotomy	7 (6.73)
BMI	27.9 ±5.27	Cardiopulmonary Bypass	1 (1.11)
sCr	1.06 ±0.47	Blood Loss (cc)	682.37 ±2156.61
eGFR	77.93 ±30.6	Blood Transfusion	0.75 ±4.09
Charlson Index	4.02 ±3.26	Hospital days	7.97 ±8.50
size	6.8 ±2.57		
N+	9 (7.89)		
M+	16 (13.33)		

Results

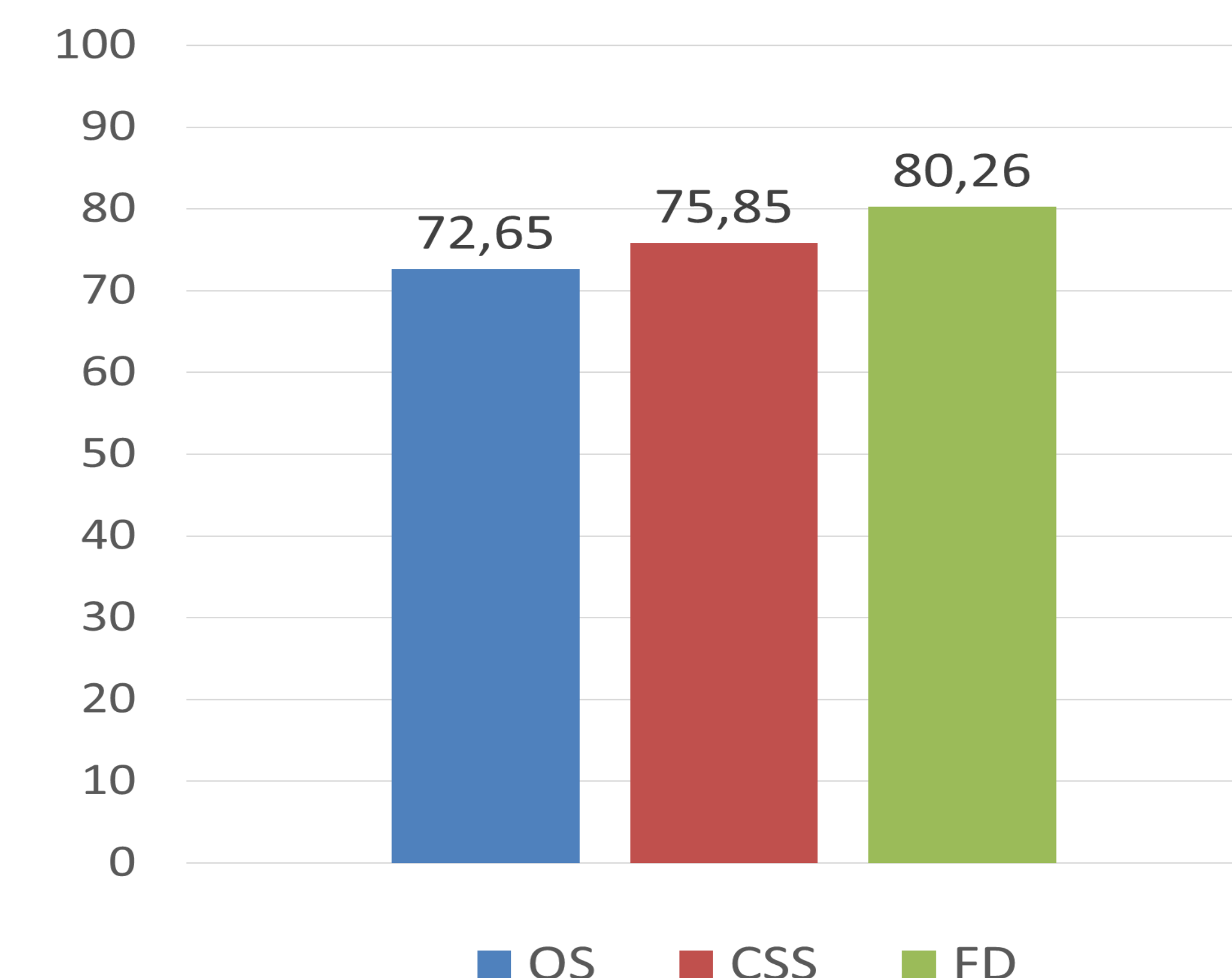
Mean age and BMI were and 27.9 ±5.27 respectively. Mean Pre-operative eGFR was 77.93 ±30.6mL/min. 50.98% had an ASA score ≥2. Mean tumour size was 6.8 ±2.57cm, 7.89% were N+ and 13.33% M+. Thrombus level in 94.53% of the patients was confined to the renal vein (level ≤I). Mean operating time was 197.05 ±88.35min with a mean blood loss of 682.37 ±2156.61mL. In 14.42% and 6.73% of patients lymphadenectomy and cavotomy were performed respectively, while 1.11% needed cardiopulmonary bypass. Major complications (Clavien ≥ 3) occurred in 24.8% of patients with no intraoperative deaths. Mean hospital stay was 7.97 ±8.50days. After a mean follow up of 935.33 ±862.14days, mean eGFR variation was -2.04 ±47.26 mL/min; CSS was 75.85% and OS was 72.65% with 80.26% of the patients being free of recurrence, 7.89% having disease progression and 11.84% stable disease.

Table 3. Outcome

No (%) / Mean (±SD)

Follow up (days)	935.33 ±862.14
Variation eGFR	-2.04 ±47.26
Variation sCr	-2.04 ±47.26
Free of Disease	61 (80.26)
Disease Progression	6 (7.89)
Stable Disease	9 (11.84)

Figure 1. Survival



Conclusions

In KC + VT MI surgery may be feasible yielding acceptable oncological and functional outcomes. However, blood loss, hospital stay and high grade complications remain relatively high. Further large prospective studies are needed to evaluate the role of MI surgery for KC + VT.