Left versus Right Living Donor Nephrectomy. Comparison of indications and outcomes in a large centre and a survey of national practice.

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INTRODUCTION

In the modern era almost all living donor nephrectomies are done laparoscopically. The left kidney is the preferred kidney due to the longer left renal vein and potentially easier approach technically [1,2]. There is some reticence in selecting the right kidney in a donor. We analysed 873 donors done laparosopically in a large centre evaluating laterality and indications for a right donor nephrectomy,

Donor and recipient outcomes were compared and a survey was carried out of national practice

METHODS

All living donor nephrectomies and transplants done in a single centre from 01/2006 to 11/2018 were analysed retrospectively from all patient record sources. Recipient variables which were analysed included cold ischemia time (CIT) graft function, transplant renal artery stenosis, ureteric stenosis, graft loss and recipient death with or without a functioning graft. An analysis of national practice was extrapolated from anonymised CIT data provided by NHSBT.

RESULTS

873 nephrectomies were done laparoscopically of which 860 donors were done by the laparoscopic hand assisted technique. 13 were done totally retroperitoneoscopically and in 121 patients data was deficient and were excluded. 604(84.3%) were left sided nephrectomies and 135 (15.7%) right sided. Among the recipients 126 were paediatric and 613 adult.

Of the right sided 60 (44.4%) were due to fewer arteries as compared to left when the split function was within acceptable range and 55 (40.7%) were due to the right organ having much lower split function. In 20(14.8%) the reason was due to other factors e.g cysts, incidentaloma, scarring, etc. The other variables are as tabulated below and there were no statistically significant differences observed (p>0.05). The national CITs were comparable with the institutional figures.

	Left (n,%)		Right (n,%)		Overall
Number of cases	604	81.7%	135	18.3%	739
Age average in years	47.1	-	47.5	-	47.21
Gender distribution (M)	276	45.7%	67	49.6%	343
Female	328	54.3%	68	50.4%	396
Average BMI Kg/m2	26.8	-	27.6	-	26.9
UK TOTAL	10271	84%	2036	16%	12307

TABLE 1. *DEMOGRAPHICS*

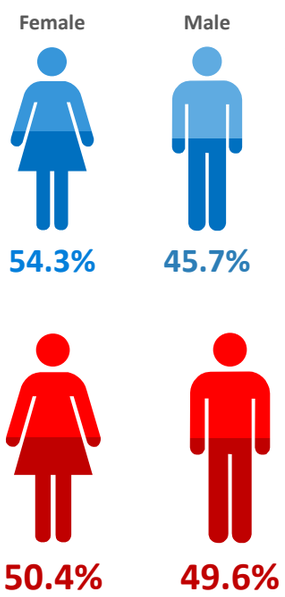

Fig. 1 : Gender distribution

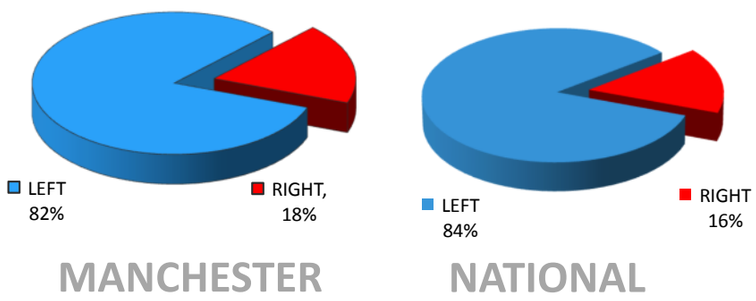

Fig. 2 : Comparison with National data

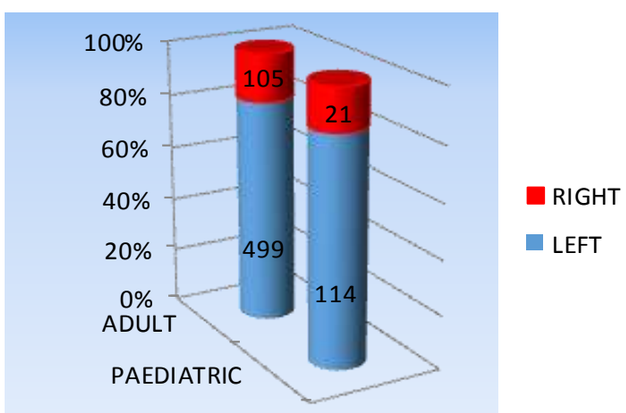

Fig. 3 : Adult v/s paediatric distribution

	Left (n,%)		Right (n,%)		OVER-ALL	%
Average SURGICAL TIME (minutes)	181.42	-	166.8	-	172.1	-
Average warm ischaemia time (min)	3.55	-	3.52	-	3.53	-
Conversions in donor	2	0.33%	5	1.51%	7	0.94%
Bleeding in donor	10	1.34%	1	1.51%	12	1.6%
Reexploration in Donor	18	2.45%	2	1.48%	20	2.7%
Incisional herniae in donor	36	5.9%	7	5.18%	43	5.8%
Surgical site infections (SSI+DSI)	19	3.14%	6	4.44%	25	3.38%
Average donor Hospital Stay in days	4.31	-	4.14	-	4.27	-
Adult recipients	499	81.4%	114	18.6%	613	-
Paediatric recipients	105	83.3%	21	16.7%	126	-
Average CIT (min)	204	-	221	-	197	-
Graft Thrombosis in recipient	7	1.2%	0	0%	7	0.94%
Bleeding in recipient	5	0.8%	2	1.4%	7	0.94%
TRAS in recipient	3	0.66%	0	0%	3	0.40%
Ureteric stenosis	2	0.33%	1	0.7%	3	0.40%
PNF in recipient	1	0.16%	0	0	1	0.71%
Reexplorations in recipients	11	2%	2	1.4%	13	1.75%
Graft Failure in recipient	32	5.3%	4	2.8%	36	4.87%
Death with functioning graft	20	3.3%	2	1.4%	22	2.97%

TABLE 2. *OUTCOMES*

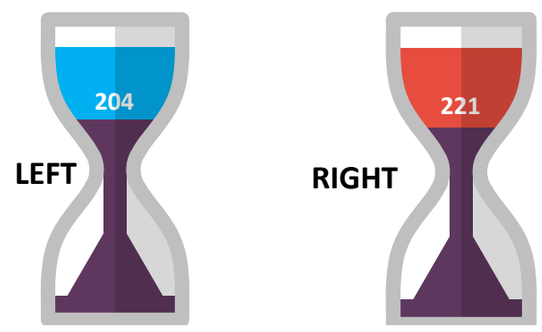

Fig. 4: Cold ischaemia times

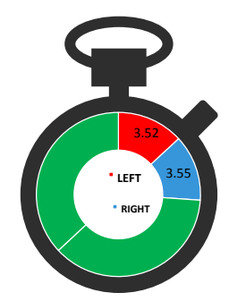

Fig. 5: Warm ischaemia times

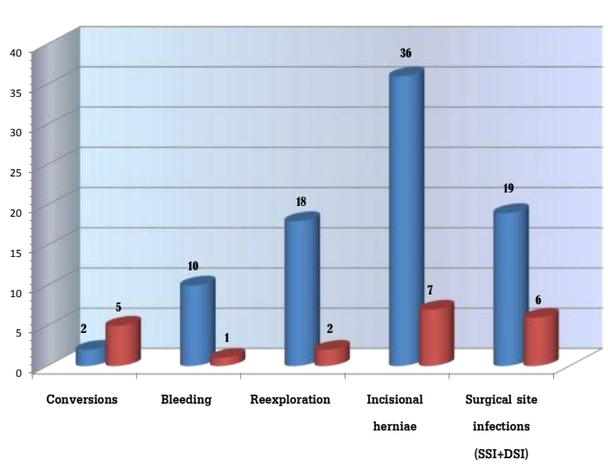

Fig. 6: Donor complications

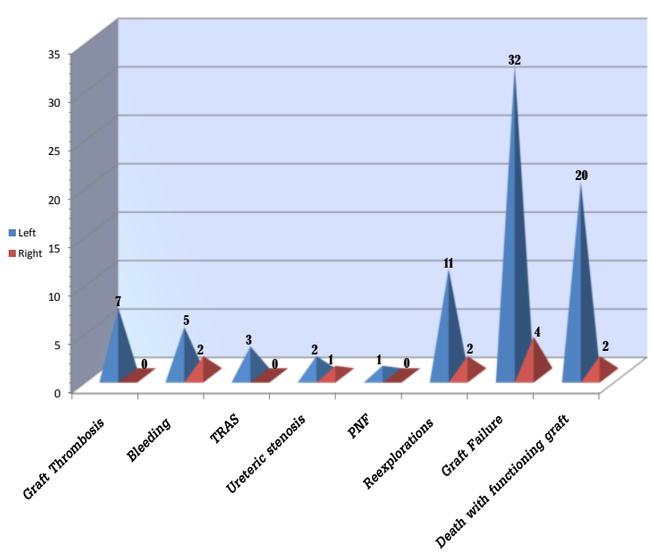

Fig. 7 : Recipient complications

DISCUSSION

Analysis of this large group shows that whilst the left kidney is preferred and the right selectively chosen, there is no impact of laterality of the kidney on recipient outcomes (p>0.05). The side of donor nephrectomy should be decided on functional and anatomical reasons[1]. Nationally the left : right split is almost 4:1 with 84% being left and 16% being right. Right HALDN is a safe procedure as proven by studies worldwide[1,2] . Centres where right donor nephrectomy is not offered may be disadvantaging donors and recipients .

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