

PROSPECTIVE STUDY COMPARING THE YIELD OF LYMPH NODE SAMPLING VS COMPREHENSIVE LYMPH NODE DISSECTION IN WILMS’ TUMOR

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Introduction

Wilms’ tumor is the most common pediatric renal solid malignancy, present usually as an asymptomatic abdominal mass in most cases. Other signs and symptoms include; abdominal pain, hypertension, hematuria, and fever. The incidence of Wilms’ tumor is estimated to be about 1: 10,000 worldwide. Children with Wilms’ tumor commonly have associated congenital anomalies. An abdominal CT scan is the gold standard imaging for diagnosis. Lymph node involvement significantly worsens the prognosis of Wilms’ tumor patients. Therefore, in the interest of minimizing surgical morbidity, surgeons may choose to restrict sampling of lymph nodes to those that are most safely removed, probably sufficient to ensure accurate staging and hence extensive lymph node dissection is not necessary. According to the International Society of Pediatric Oncology (SIOP) protocol, the main treatment for Wilms’ tumor is radical nephrectomy with lymph node sampling, after preoperative chemotherapy

Aim of the work

The aim of this study is to evaluate the outcome of hilar lymph node sampling in comparison to comprehensive lymph node dissection with regards to the pathological yield of the lymph nodes post nephrectomy in patients with Wilms’ tumor.

Subjects

After approval of the medical ethics committee of Alexandria Faculty of medicine, informed consent was taken from all patients to include their data in this study. The study will include pediatric patients diagnosed with Wilms’ tumor who will be operated by radical nephrectomy in addition to lymph nodes sampling and lymph nodes dissection in the same surgical setting at Alexandria Pediatric Oncology Center, Borg EL Arab University Hospital, Pediatric Surgery Unit, Department Of Surgery, from 01/01/2020 to 31/12/2020.

Methods

A- Preoperative chemotherapy: According to SIOP 2001 guidelines all patients should undergo chemotherapy before surgery.
B- Surgery:
Step one: Radical nephrectomy with hilar lymph nodes excision as one specimen (sampling lymphadenectomy).
Step two: Completion of the ipsilateral lymphadenectomy (lymph node dissection).

Results

Table (1):Comparison between tumor size Pre-chemotherapy and post-chemotherapy:

Tumor Size:			
	Pre-Chemotherapy	Post-Chemotherapy	Wilcox Paired test
Min. – Max.	18 – 4104 cm ³	3.0 – 2992.0 cm ³	P= 0.0002*
Mean ± SD	1021.6 ± 898.86	453.25 ± 669.32	
Median (IQR)	855.0 (496.1 – 1288.4)	210.0 (86.25 – 570.0)	

Table (2): Comparison between retroperitoneal lymph node dissection and lymph node sampling yield:

The number of the Lymph Nodes collected:			
	Dissection	Sampling	Student T-test
Min. – Max.	4 – 15 LN	2.0 – 6.0 LN	P <0.0001*
Mean ± SD	7.6 ± 2.7	3.85 ± 1.18	
Median (IQR)	7.0 (6.0 – 9.0)	4.0 (3.0 – 5.0)	
Yield Lymph Nodes:			
Min. – Max.	0 – 7	0 – 2	Mann-whitney test
Mean ± SD	0.5 ± 1.61	0.2 ± 0.52	P = 0.948

Conclusion

There is a statistically significant increase in the number of excised Lymph nodes in dissection versus the number of excised Lymph nodes in sampling. However, there was no statistically significant result regarding the yield of excised LNs. Therefore, hilar lymph nodes sampling may be preferred over Lymph nodes dissection, even though they provide the same operating outcomes.