

Contents lists available at ScienceDirect

Journal of Pediatric Surgery

journal homepage: www.elsevier.com/locate/jpedsurg



Correspondence

Re: How many lymph nodes are enough? Assessing the adequacy of lymph node yield for staging in favorable histology Wilms tumor



Dear Editor,

The research paper "How many lymph nodes are enough? Assessing the adequacy of lymph node yield for staging in favorable histology Wilms tumor" by Saltzman et al., JPS 2019; 54:2331–1335 [1] was based on an analysis from the National Cancer Database data. The authors intended goal was to develop a better understanding of the "desired LN yield" in favorable-histology Wilms tumor with great effect. One of the principal objectives of Wilms tumor surgery is to accurately stage disease and correctly guide adjuvant treatment. The importance of adequate surgical staging of lymph node disease has been underscored by numerous studies [2–4]; and sampling of the hilar and ipsilateral paraaortic or caval nodes is mandated [5].

However, as surgeons, we must avoid the obsession to quantify the "number of adequate lymph nodes" [6]. This cognitive approach will lead to systematic errors that will cost our patients if left unchecked. The reasons for this concern are discussed below:

- 1. The number of lymph nodes as an outcome measure for an oncologic surgeon is impractical as it cannot be assessed in *real-time* on a case-by-case basis (it requires systematic *postoperative* analysis of the specimen). A much more pragmatic description would be for the surgeon to describe which lymph node beds were interrogated, and to what extent (sampling or clearance) [7].
- 2. Lessons from adult colonic cancer surgery dictate that the number of lymph nodes identified in surgical specimens is heavily dependent on the fastidiousness, technique and experience of the individual histopathologist [8]. This has been acknowledged by the authors in the discussion, but this knowledge undermines what conclusions can be drawn from the data presented.
- 3. Deepening our understanding of polar or central renal tumors, and how their drainage relates to the segmental anatomy of the kidney, and subsequently which lymph node beds are most likely to yield a positive node based on the anatomy of the tumor, would be much more valuable to the surgeon. Also the asymmetrical drainage of a left or right tumor needs to be considered [9]. Ultimately, how each segment of the kidney drains into the various network of adjoining lymph node beds is most critical [10].
- 4. Another lesson from adult melanoma and breast cancer surgery is isolating the key draining lymph node of the tumor [11]. Methods of sentinel draining lymph node identification or lymph node mapping are developing through noninvasive methods [12,13]. This information will allow precision surgery to develop, isolating particular lymph nodes that are draining individual tumors. Obviously, these techniques require avoidance of tumor rupture and spillage.
- 5. Evidence-based techniques to prevent chyle leak postoperatively must develop in parallel to such advances to help the surgeon

avoid the morbidity of excessive/unnecessary lymph node surgery [14].

Kiarash Taghavi Department of Paediatric Urology, Royal Children's Hospital, 50 Flemington Rd, Parkville, Victoria 3052, Australia Department of Paediatrics, University of Melbourne, Melbourne, Australia E-mail address: kiarash.taghavi@gmail.com

https://doi.org/10.1016/j.jpedsurg.2020.05.048

References

- Saltzman AF, Smith DE, Gao D, et al. How many lymph nodes are enough? Assessing the adequacy of lymph node yield for staging in favorable histology Wilms tumor. J Pediatr Surg. 2019;54(11):2331–5.
- [2] Ehrlich PF, Anderson JR, Ritchey ML, et al. Clinicopathologic findings predictive of relapse in children with stage III favorable-histology Wilms tumor. J Clin Oncol. 2013; 31(9):1196.
- [3] Shamberger RC, Guthrie KA, Ritchey ML, et al. Surgery-related factors and local recurrence of Wilms tumor in National Wilms Tumor Study 4. Ann Surg. 1999;229 (2):292.
- [4] Kieran K, Anderson JR, Dome JS, et al. Lymph node involvement in Wilms tumor: results from National Wilms Tumor Studies 4 and 5. J Pediatr Surg. 2012;47(4):700–6.
- [5] Ehrlich PF, Ritchey ML, Hamilton TE, et al. Quality assessment for Wilms' tumor: a report from the National Wilms' Tumor Study-5. J Pediatr Surg. 2005;40(1): 208–13.
- [6] van den Heuvel-Eibrink M, Hol J, Pritchard-Jones K, et al. Position paper: rationale for the treatment of Wilms tumour in the UMBRELLA SIOP-RTSG 2016 protocol. Nat Rev Urol. 2017;14(12):743–52.
- [7] Leape LL, Breslow NE, Bishop HC. The surgical treatment of Wilms' tumor: results of the National Wilms' Tumor Study. Ann Surg. 1978;187(4):351.
- [8] Thorn C, Woodcock N, Scott N, et al. What factors affect lymph node yield in surgery for rectal cancer? Colorectal Dis. 2004;6(5):356–61.
- [9] Karmali RJ, Suami H, Wood CG, et al. Lymphatic drainage in renal cell carcinoma: back to the basics. BJU Int. 2014;114(6):806–17.
- [10] Russell PS, Hong J, Windsor JA, et al. Renal lymphatics: anatomy, physiology and clinical implications. Front Physiol. 2019;10:251.
- [11] Valsecchi ME, Silbermins D, De Rosa N, et al. Lymphatic mapping and sentinel lymph node biopsy in patients with melanoma: A meta-analysis. J Clin Oncol. 2011;29(11): 1479–87.
- [12] Pramanik M, Song KH, Swierczewska M, et al. In vivo carbon nanotube-enhanced non-invasive photoacoustic mapping of the sentinel lymph node. Phys Med Biol. 2009;54(11):3291.
- [13] Kim C, Erpelding TN, Jankovic L, et al. Performance benchmarks of an array-based hand-held photoacoustic probe adapted from a clinical ultrasound system for noninvasive sentinel lymph node imaging. Philos Trans A Math Phys Eng Sci. 2011; 369(1955):4644–50.
- [14] Lv S, Wang Q, Zhao W, et al. A review of the postoperative lymphatic leakage. Oncotarget. 2017;8(40):69062.