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Is it Time for Synoptic Reporting in Melanoma Nodal Surveillance Ultrasonography?

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With the increased use of nodal surveillance in sentinel lymph node positive (SLN+) melanoma following the Second Multicenter Selective Lymphadenectomy Trial (MSLT-II),^{1,2} the availability of high-quality, clinically actionable nodal surveillance ultrasonography (U/S) has become critical. Based on MSLT-II, U/S criteria regarding nodal recurrence include length-to-depth ratio >2, hypoechoic lymph node (LN) hilum, and changes in LN vascularity, with biopsy recommend if two or more features are present.¹ While prior qualitative work has identified a potential disconnect between surgeons' and radiologists' awareness of MSLT-II criteria,³ little is known about how these criteria have been adopted and reported outside of clinical trial settings or used by surgical teams when interpreting ultrasound results.

METHODS

Patients with SLN+ melanoma undergoing nodal surveillance at a single tertiary cancer center from July 2017 to September 2022 who received at least one nodal ultrasound were identified retrospectively. Reporting language from each ultrasound was analyzed for number of MSLT-II nodal ultrasound criteria reported. Additionally, we abstracted whether a clinically actionable recommendation was made (e.g. continued surveillance or biopsy). Descriptive statistics and Chi-square tests were performed using Stata 17 (StataCorp LLC, College Station, TX, USA). This study was deemed exempt by the University of Alabama at Birmingham Institutional Review Board.

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DISCLOSURE Kelsey B. Montgomery, Ashley M. Holder, Constantine M. Burgan, Samuel J. Galgano, and Kristy K. Broman have no conflicts of interest to declare.

RESULTS

Overall, 269 nodal ultrasounds were performed in 78 patients (median three U/S per patient; interquartile range [IQR] 1–5). The majority of ultrasounds (81.0%) reported normal findings versus abnormal findings (19.0%). As detailed in Table 1, only a small proportion of normal ultrasounds had one or more MSLT-II criteria reported (33/215, 15.3%) versus the majority of abnormal ultrasounds (48/54, 88.9%; $p < 0.0001$). While most abnormal ultrasounds had only one MSLT-II criterion reported (20/54, 37.0%), fewer had two (15/54, 27.8%) or three criteria (13/54, 24.1%). Of the eight abnormal ultrasounds with biopsy recommendation, six (75%) had two or more MSLT-II criteria reported. Clinically actionable recommendations were provided in 94.9% of normal ultrasounds compared with 64.8% of abnormal ultrasounds ($p < 0.0001$).

DISCUSSION

In this single-institution retrospective study at a tertiary cancer center, clinically actionable recommendations were provided in the majority of nodal U/S reports, but few documented specific criteria associated with nodal recurrence as defined in MSLT-II.¹ More importantly, when ultrasound findings were abnormal, they were much less likely to be accompanied with a clinically actionable recommendation (e.g. biopsy or continued surveillance). We suspect that this discrepancy is due at least in part to the lack of a shared mental model between surgeons and radiologists for the intention behind nodal surveillance ultrasounds and the evidence supporting the use of U/S to identify specific findings of nodal recurrence that would prompt biopsy.³ In their current format, nodal ultrasound reports may be difficult for surgical team members, including both surgeons and advanced practice providers, to interpret results and plan the next steps.

The rapid adoption of nodal surveillance as the predominant management strategy for SLN+ melanoma in the surgical oncology community^{2,4} presents an opportunity for collaboration between surgeons and radiologists to ensure high-quality, clinically actionable nodal U/S. A synoptic reporting system for melanoma nodal ultrasound may standardize reporting and improve surgeon interpretation of the results, particularly when abnormal findings are present. Additionally, a synoptic reporting template could potentially be disseminated to non-specialized centers to increase access for rural or underserved patients who may face financial, transportation, or other barriers in returning to their treating center for frequent examinations.^{3,5,6} Following a multidisciplinary collaborative effort to develop and implement a synoptic reporting template for melanoma nodal U/S at our institution (electronic supplementary material), we plan to study its adoption and perceived utility in a multidisciplinary cohort of surgeons and radiologists in future work.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Reporting of MSLT-II criteria and clinically actionable recommendations in melanoma nodal surveillance ultrasonography

TABLE 1

Variable	Normal ultrasound [n = 215]	Abnormal ultrasound [n = 54]	Total [N = 269]	p-Value
MSLT-II criteria reported				
0	182 (84.7)	6 (11.1)	188 (69.9)	< 0.0001
1	28 (13.0)	20 (37.0)	48 (17.8)	
2	2 (1.0)	15 (27.8)	17 (6.3)	
3	3 (1.4)	13 (24.1)	16 (6.0)	
Clinically actionable recommendation made				
Continue surveillance	204 (94.9)	27 (50.0)	231 (85.9)	< 0.0001
Biopsy	0 (0.0)	8 (14.8)	8 (2.9)	
Combined	204 (94.9)	35 (64.8)	239 (88.8)	

Variables are expressed as frequency (%)

MSLT-II Second Multicenter Selective Lymphadenectomy Trial