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Less is More: Comparing the 2015 and 2009 American Thyroid Association Guidelines for Thyroid Nodules and Cancer

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Background: The American Thyroid Association (ATA) has recently revised its guidance pertaining to thyroid nodules and follicular cell-derived thyroid cancer. The 2015 guidelines are massive in both scope and scale, with changes in the organizational approach to risk stratification of nodules and cancer, as well as multiple sections covering new material. This review highlights the major structural and organizational changes, focusing attention on the most dramatically changed recommendations, that is, those recommendations that clinicians will find striking because they call for significant divergence from prior clinical practice.

Summary: The revised approach to thyroid nodule risk stratification is based on sonographic pattern, with an emphasis on pattern rather than growth in the long-term surveillance of nodules. Accumulating data have also been incorporated into an updated risk stratification scheme for thyroid cancer that increases the size of the low-risk pool, in part because low-volume lymph nodal metastases are now considered low risk. The most fundamentally altered recommendation is that lobectomy might be considered as the initial surgical approach for follicular cell-derived thyroid cancers from 1 to 4 cm in size.

Conclusions: The underlying theme of the 2015 ATA guidelines is that ''less is more.'' As these new recommendations are adopted, fewer fine-needle aspiration biopsies will need to be done, less extensive surgeries will become more common, less radioactive iodine will be used either for treatment or for diagnostics, and less stimulated thyroglobulin testing will be done. Mastery of these guidelines will help clinicians know when it is reasonable to do less, thus providing responsibly individualized therapy for their patients.

Introduction

The American Thyroid Association (ATA) has recently revised its guidance pertaining to thyroid nodules and follicular cell-derived thyroid cancer, publishing the *2015 American Thyroid Association Management Guidelines for Patients with Thyroid Nodules and Differentiated Thyroid Cancer* (1). The new document is massive in both scope and scale, with 101 recommendations supported by 996 citations, up from 80 recommendations and 434 citations in the 2009 ATA guidelines (2). With such a large document, identifying what has changed has become a challenging task for clinicians.

This review is intended to examine briefly the major changes in the 2015 guidelines, highlighting those recommendations calling for the most striking changes versus current clinical practice. To keep this ''companion guide to the guidelines'' reasonably concise, new sections of the 2015 guidelines addressing issues not really covered in 2009 are noted but not explored in depth. While some editorializing is unavoidable, no attempt is made here to critique the quality or appropriateness of the specific recommendations. This article was written independently from the ATA and is not endorsed by that organization. It is not the intent of this review to replace individual decision making, the wishes of patients or their families, or clinical judgment.

Thyroid Nodule Risk Stratification: Sonographic Pattern More Important than Growth

The 2015 ATA guidelines feature a revised strategy for deciding which thyroid nodules should undergo fine-needle aspiration (FNA), with newly defined risk groups based on sonographic pattern. To facilitate the decision-making process,

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features that define these groups, as well as their associated risks of malignancy, are presented both in table form (2015 table 6) and with example images (2015 fig. 2). Recommended minimum size thresholds for FNA for each of these groups are given in 2015 Rec 8.

Reassuringly, essentially the same nodules are recommended for FNA in 2015 as under the 2009 scheme (2009 Rec 5 and table 3). One small but notable change is that the specific >5 mm threshold has been dropped for patients with ''high-risk history'' (clinical symptoms of malignancy, history of childhood irradiation, or familial thyroid cancer; see 2015 Section A10). Instead, high-risk history justifies consideration of FNA at ''lower size cutoffs'' for all of the sonographic risk groups at the clinician's discretion (text supporting 2015 Rec 8). Note that per the 2015 guidelines, in the absence of high-risk history, sub-centimeter nodules should not be routinely selected for FNA, even with a high suspicion ultrasound pattern. It should also be noted that while positron emission tomography (PET)-positive nodules should be biopsied, diffuse PET uptake in the thyroid does not mandate FNA (2015 Rec 5).

Strikingly, sonographic pattern is now emphasized more than growth in the surveillance of nodules following an initial benign FNA. As per 2015 Rec 23A (following a benign FNA), ''Nodules with high suspicion US pattern: repeat US and US FNA within 12 months (Strong Recommendation, moderate-quality evidence).'' This fundamental shift is justified by studies comparing the two features in terms of predicting false negative FNAs, as well as by studies identifying problems with intra-observer size measurement, and finally by the lack of long-term follow-up data supporting growth as a risk criterion. Thus, for high-suspicion sonographic pattern nodules, the previous requirement for growth or change (2009 Rec 14b) has been dropped.

If a second FNA is also benign, then further ultrasounds for surveillance are strongly discouraged (2015 Rec 23D). At the same time, 2015 Rec 27B recommends continued ''monitoring'' for nodules known to be growing; the clinician is left to reconcile this mild conflict.

Molecular genetic testing for nodule risk stratification is addressed in a series of new recommendations (2015 Recs 13–17, 19, 20, and 52). However, given the lack of long-term outcome data, the 2015 guidelines do not fully commit to the adoption of these tests in routine clinical practice. In tone, the language is permissive rather than directive, that is, these molecular tests ''may be used'' rather than ''should be used.'' It is suggested that mutational testing might alter surgical decision making for certain indeterminate or suspicious nodules (e.g., 2015 Rec 17). However, ambiguity exists because it is not yet established which specific mutations lead to a high enough risk of recurrence to justify total thyroidectomy (as opposed to lobectomy).

Note that cytology results should now be reported using the Bethesda system (2015 Rec 9).

Surgical Management: Allowing for Lobectomy in the Treatment of Thyroid Cancer

One of the most dramatic changes in the 2015 ATA guidelines relates to the surgical management of thyroid cancer: total thyroidectomy is no longer mandated for all patients with primary thyroid cancers >1 cm. Instead, the new guidelines promote the concept that selected patients found to have cancers <4 cm in size might still be classified as having low-risk disease, and these patients may potentially be treated with lobectomy alone, in spite of having a slightly higher risk of loco-regional recurrence.

The argument justifying this change is based on a number of factors: decreasing indications for ^{131}I therapy and scanning, critical re-assessment of studies comparing outcomes with lobectomy with total thyroidectomy, and the belief that salvage therapy is effective in most cases if persistent/recurrent disease is identified. The guideline authors conclude:

> …In properly selected low to intermediate risk patients (patients with unifocal tumors <4 cm, and no evidence of extrathyroidal extension or lymph node metastases by examination or imaging), the extent of initial thyroid surgery probably has little impact on disease specific survival … since salvage therapy is quite effective in the few patients that recur after thyroid lobectomy, a conservative management approach to completion surgery, accepting a slightly higher risk of loco-regional recurrence, is an acceptable management strategy. (2015 Section B7)

The details of the revised surgical approach are laid out in 2015 Rec 35B, perhaps the most fundamentally changed of all the recommendations:

> For patients with thyroid cancer >1 cm and <4 cm without extrathyroidal extension, and without clinical evidence of any lymph node metastases (cN0), the initial surgical procedure can be either a bilateral procedure (near-total or total thyroidectomy) or a unilateral procedure (lobectomy). Thyroid lobectomy alone may be sufficient initial treatment for low risk papillary and follicular carcinomas; however, the treatment team may choose total thyroidectomy to enable RAI [radioactive iodine] therapy or to enhance follow-up based upon disease features and/or patient preferences. (Strong Rec, Moderate-quality evidence).

For comparison, 2009 Rec 26 stated: ''For patients with thyroid cancer >1 cm, the initial surgical procedure should be a near-total or total thyroidectomy unless there are contraindications to this surgery….''

The decision to pursue initial lobectomy would be validated if no features of intermediate risk disease (e.g., extrathyroidal extension) were found on surgical pathology. However, the finding of any intermediate risk features would mandate completion thyroidectomy. At the same time, initial total thyroidectomy (or completion thyroidectomy) may be preferred for a number of reasons: the presence of cytology suspicious for malignancy, positive mutations associated with carcinoma, nodules >4 cm, patients with high-risk history, patients with bilateral nodules, those with significant comorbidities, and patients who prefer total thyroidectomy (2015 Recs 20A and B). The last clause serves to remind that since the medical facts will not absolutely dictate the optimal extent of surgery in many cases, clinicians must incorporate their patients' values and preferences in making their surgical recommendations.

The implications of 2015 Rec 35B echo throughout the surgical recommendations. For patients with isolated microcarcinomas (cancers <1 cm), the language promotes a shift toward lobectomy only, with 2015 Rec 35C stating lobectomy ''should be'' chosen if surgery is performed, rather than ''may be'' chosen, as per 2009 Rec 26. The same applies to diagnostic surgery, with the revised language favoring lobectomy

as the ''recommended initial surgical approach'' for indeterminate nodules (2015 Rec 19). Conceptually, more limited surgery should be applied in these scenarios because postsurgical staging is likely to be low risk in the majority of cases.

Management of Suspicious Lymph Nodes and Nodal Metastases: Focus on >8–10 mm

Preoperative ultrasound is now encouraged, not just for those with malignant cytology (2009 Rec 21B), but also for those with suspicious cytology or molecular findings (2015 Rec 32A). Importantly, for any patient with thyroid nodules, the ultrasound should include imaging of cervical lymph nodes, not just the thyroid gland (2015 Rec 6). FNA of suspicious lymph nodes is still recommended ''if this would change management'' (as per 2009 Rec 21). Notably though, a >8–10 mm smallest diameter specific size threshold is now suggested for lymph node FNA (with or without thyroglobulin wash; 2015 Rec 32B).

Lymph node dissection recommendations are fundamentally unchanged. Of note, guidance on when to do central neck dissection is slightly expanded in 2015 Rec 36, with the change being that prophylactic central neck dissection is now deemed reasonable if lateral nodes are clinically involved (cN1B) or ''if the information will be used to plan further steps in therapy,'' not just when the primary tumor is already known to be advanced (T3 or T4; for comparison, see 2009 Rec 27),

Perioperative Management: Evaluate the Voice

The 2015 ATA guidelines offer an expanded range of recommendations related to the perioperative management of patients designated for thyroid surgery. Most of these codify widely accepted practices, for example a reminder is given that the parathyroid glands and their blood supply should be preserved during thyroid surgery (2015 Rec 43). The subject of voice monitoring was not addressed in the 2009 guidelines, but in 2015, this subject is covered by 2015 Recs 40–44; these are substantially in agreement with the American Association of Otolaryngology—Head and Neck Surgery 2013 Clinical Practice Guidelines (3).

Initial Versus Dynamic Risk Stratification: More Low-Risk Patients

The 2015 ATA guidelines feature a greatly expanded section on risk stratification of thyroid cancer (2015 Recs 46–49). The ''Modified Initial Risk Stratification (MIRS) system'' builds on the ''Initial Risk Stratification'' foundation (2009 Section B13 and Rec 31), which has been validated by several studies (summarized in 2015 ATA table 11), adding finer detail as to the implications of individual risk factors. Close scrutiny should be given to 2015 figure 4, in which the MIRS system risk factors are ranked graphically.

Importantly, the definition of ''low risk of recurrence'' has expanded, most notably by inclusion of ''small volume'' lymph node involvement. This means that patients having five or fewer lymph node metastases, each <2 mm in the central neck, could still be considered to be at low risk for recurrence:

> While the modified 2009 risk stratification system continues to classify intrathyroidal PTC without vascular invasion as low risk, the category was expanded to include patients with small volume lymph node metastases (clinical N0 or ≤5 pathologic N1 micrometastases, <0.2 cm in largest dimension), intrathyroidal encapsulated follicular variant of papillary thyroid cancer, intrathyroidal well differentiated follicular cancer with capsular or minor vascular invasion (<4 vessels involved), and intrathyroidal papillary microcarcinomas that are either *BRAF* wild type or *BRAF* mutant. (2015 Section B23)

On the other hand, the finding of microscopic extrathyroidal extension differentiates the patient as having at least an intermediate risk of recurrence:

> …continues to include patients with microscopic invasion of the tumor into perithyroidal soft tissues, vascular invasion, uptake outside the thyroid bed at the time of remnant ablation, and aggressive histologies, but it has been modified to include only a subset of patients with lymph node metastases (clinical N1 or >5 pathologic N1 with all involved lymph nodes <3 cm in largest dimension), and multifocal papillary microcarcinoma with extrathyroidal extension and *BRAF* mutated (if known). (2015 Section B23)

The literature is still unclear as to whether there is any amount of microscopic extrathyroidal extension that could be considered to be low risk. Note, however, that in the table summarizing ^{131}I recommendations (2015 table 14), the caveat is given that ''…smaller tumors with microscopic extrathyroidal extension may not need ^{131}I.''

Given the inclusion of tumors with ''aggressive histology'' in the intermediate risk group, it should be noted that 2015 Rec 46 identifies the tall-cell, columnar, and cribiform-morular variants of papillary cancer as having potentially more aggressive behavior, along with widely invasive follicular thyroid cancer and poorly differentiated cancer. Solid variant and diffuse-sclerosing variant ''…may be associated with a less favorable outcome, although the data remain conflicting'' (2015 Section B14, p. 104).

The ''high-risk'' group is mostly unchanged. In addition to patients with macroscopic extrathyroidal extension, incomplete resection, distant metastases, and postoperative serum thyroglobulin suggestive of distant metastases, it now includes patients with lymph node metastases >3 cm, as well as follicular thyroid cancer with more than four foci of vascular invasion or extracapsular vascular invasion.

The language of the 2015 ATA guidelines sends a positive message that mutational analysis of thyroid cancer has the potential to refine risk estimates, but also cautions that evidence is currently lacking to support routinely performing this type of analysis (2015 Rec 48C). Furthermore, postoperative molecular testing is not seen as being established enough to guide ^{131}I therapy (2015 Rec 52; also discussed in Section C28) or systemic therapy (2015 Rec 92B). The prognostic utility of *BRAF* mutational analysis remains controversial both in the literature and in the guidelines. Under the MIRS system, *BRAF* testing is not routinely recommended for initial postoperative risk stratification (2015 Rec 48C), since *BRAF* status *in isolation* has a low positive predictive value for detecting extrathyroidal spread of papillary microcarcinomas (2015 Section A14), except in the case of multifocal papillary microcarcinomas with extrathyroidal extension (2015 Section B21, table 11). For larger tumors, *BRAF* status in isolation is ''not sufficient to substantially contribute to risk stratification in most patients''

(2015 Section B21) (1), though recent data suggest that ''an incremental improvement in risk stratification can be achieved if the *BRAF* mutational status is considered in the context of other standard clinico-pathological risk factors.'' The guideline authors state that *BRAF* testing is not yet routinely recommended pending the results of ongoing studies, since ''the clinical implications of this incremental improvement in risk stratification are not clear.''

As time passes, clinicians continually reevaluate the risk of recurrence and prognosis in real time as clinical data accrue for each patient. This iterative process is formalized under the rubric ''dynamic risk stratification (DRS)'' (2015 Rec 49 and Section B26) (1). DRS has simple new terminology indicating whether there is complete or incomplete biochemical (thyroglobulin) or structural (imaging) response to therapy. While data are lacking to support specific recommendations based on the new DRS response categories, it is anticipated these terms will be increasingly used in the literature. Thus, they are discussed in detail (2015 Sections B27–31). The utility of the DRS terminology is illustrated in 2015 table 13, which correlates the DRS response category with clinical outcomes and management implications.

Radioactive Iodine Therapy: Fewer Patients, Lower Administered Activities

The role of radioactive iodine in the treatment of thyroid cancer continues to evolve in the 2015 guidelines. In general, recent literature has supported the concept that low-risk patients do not benefit from ^{131}I treatment, and furthermore, patients at intermediate risk for recurrence may be treated with lower activities of ^{131}I than was once thought. The new approach (2015 Rec 51, table 14) is conceptually similar to the old (2009 Rec 32, table 5): MIRS low-risk patients should not be routinely treated with ^{131}I, intermediate-risk patients ''should be considered'' for ^{131}I therapy, and high-risk patients should routinely be treated (1). Since the low-risk category in MIRS has expanded, fewer patients overall would be expected to undergo ^{131}I based on the 2015 guidelines.

Specific guidance as to RAI decision making based on both MIRS system and AJCC/TNM is given in the form of 2015 table 14, which demands close scrutiny. Confusion may arise on first glance as the reader discovers that the rows of this table do not exactly follow the MIRS system classifications, instead having several entries devoted to ''ATA low to intermediate risk'' disease and none to ''intermediate risk'' alone (1). This lack of cohesion is perhaps understandable when one considers the existent gaps in the literature as to which specific features of disease are salient to the utility of RAI therapy.

Practically speaking, the issue is to figure out which clinical or pathologic features raise the risk to the intermediate level, thus justifying consideration of ^{131}I treatment. Following 2015 table 14, the minimum rationale for treatment would include any of the following: tumor >4 cm, microscopic extrathyroidal extension, high-volume central neck metastases (>0.2 mm, or more than five metastases <0.2 mm), or any lateral neck or mediastinal lymph node metastases. Aggressive histology is not mentioned in the table but is discussed as a justification for ^{131}I in the text (2015 Section B36).

The 2015 guidelines feature an updated discussion regarding the importance of postoperative disease status in therapeutic decision making (2015 Rec 50). However, uncertainty regarding the optimal cutoff values for postoperative thyroglobulin and the role of pretreatment iodine scanning impede the formulation of specific recommendations. That being said, the finding of an elevated thyroglobulin may prompt ^{131}I treatment, even with otherwise low-risk disease at the clinician's discretion.

Regarding the administered ^{131}I activity, recent studies have mandated using lower administered activities for lower-risk patients:

> If radioactive iodine remnant ablation is performed after total thyroidectomy for ATA low risk thyroid cancer or intermediate risk disease with lower risk features (i.e. low volume central neck nodal metastases with no other known gross residual disease nor any other adverse features), a low administered dose activity of approximately 30 mCi is generally favored over higher administered dose activities. (Strong Rec, High-quality evidence). (2015 Rec 55A)

It is notable that 2015 Rec 55A is one of the few ''Strong'' recommendations based on ''High-quality'' evidence. While not a change, technically speaking, there is newly added emphasis placed on using the lower dose (for comparison, 2009 Rec 36 stated ''The minimum activity (30–100 mCi) necessary to achieve successful remnant ablation should be utilized, particularly for low-risk patients'').

Radioiodine therapy is considered separately for locoregional and metastatic disease, but not much has changed in these settings (2015 Rec 73). There is still no consensus to enable a recommendation regarding the utility of dosimetry. The one notable evidence-based change is that clinicians are cautioned to avoid empiric doses >150 mCi in patients >70 years old because the maximal tolerable tissue dose may be exceeded (2015 Rec 73B); previously, the clinician was cautioned to avoid doses >200 mCi in this setting (2009 Rec 52b).

Long-Term Management: Less Thyrotropin Suppression, Less Stimulated Testing

The general principle that the degree and duration of thyrotropin (TSH) suppression should vary based on the risk of recurrence and clinical course remains the same. The 2015 guidelines shift toward less TSH suppression during the initial surveillance period. In 2015 Rec 59, MIRS low-risk patients are assigned a target in the lower part of the reference range (0.5–2.0 mIU/L), and for MIRS intermediate risk patients, the goal range is 0.1–0.5 mIU/L. The only patients recommended to have TSH <0.1 mIU/L are those with MIRS high-risk disease (compare with 2009 Rec 40 in which all patients were candidates for suppression therapy). A detailed recommendation for long-term TSH suppression taking into account dynamic risk stratification categories is given in 2015 Rec 70. Those patients with an excellent response to therapy (both structural and biochemical complete response) can have less suppression than initial MIRS would have mandated, whereas those with a less favorable response should maintain suppression therapy. In short, the changes in the 2015 recommendations condone the practice of decreasing TSH suppression in patients who are doing well.

The role of stimulated thyroglobulin testing has been downgraded for low- and intermediate-risk patients. Whereas 2009 Rec 45A recommended measuring a stimulated TSH even for low-risk patients 12 months out from ablation, 2015

Rec 63 gives the clinician the option to defer stimulated testing for low- and intermediate-risk patients, as long as a sensitive thyroglobulin assay (cutoff <0.2 ng/mL) is used for their surveillance. The argument against routine stimulated testing, either via withdrawal or recombinant human thyrotropin (rhTSH) revolves around the concept that the increased functional sensitivities of newer thyroglobulin assays offset the increased sensitivity of detection associated with stimulation. At the same time, stimulated testing is still recommended for patients with indeterminate or incomplete responses to therapy (2015 Rec 63 and supporting text).

It should be noted that if stimulated thyroglobulin testing results are not available, then applying subsequent recommendations for empiric ^{131}I therapy becomes less straightforward, since these recommendations were written based on the results of stimulated testing. Specifically, 2015 Recs 80 and 81 propose a stimulated thyroglobulin <10 ng/mL with withdrawal, or <5 ng/mL with rhTSH as reasonable cutoffs to follow patients without empiric ^{131}I therapy. Cutoffs for nonstimulated thyroglobulin are not given.

Recurrent Nodal Metastases: Watchful Waiting for Small Ones

As the indolent natural history of most cervical nodal thyroid cancer metastases has been recognized, the concept has emerged that surgical therapy may be safely delayed or deferred for small nodal metastases in selected patients. Questions thus arise as to when FNA should be performed, and when nodal metastases should be resected.

The 8 mm minimum short-axis diameter threshold discussed in the perioperative ultrasound section (2015 Rec 32) is recapitulated in the section on which nodes to biopsy in the postoperative setting (2015 Rec 65B). In the context of proven cervical lymph node recurrence, the same 8 mm minimum size threshold is proposed for compartmental dissection (2015 Rec 71). Note that the short-axis lymph node size threshold for FNA and resection of recurrent central nodal metastases used to be 5 mm (2009 Rec 48b). Another detail to note is that the recommended size threshold for resection of lymph node metastases in the lateral neck is slightly larger (i.e., 10 mm; 2015 Rec 71).

Close observation is promoted as an option for small nodal metastases based on favorable observational studies, as well as the existence of equipoise between the higher risks of revision surgery versus the belief that resection is the best therapeutic option of macroscopic gross nodal disease. On the other hand, size is not the only potentially relevant factor: if small nodes are seen to ''threaten vital structures,'' FNA and surgery become more reasonable (2015 Rec 65C). In addition, vocal cord status, locally available surgical expertise, patient comorbidities, patient concerns, and history of prior surgery or radiation (as in 2009 Rec 50B) are all relevant to the discussion.

Advanced Disease: Expanded Guidance

One of the most practically important determinations that must be made for each patient with advanced follicular cell-derived thyroid cancer is whether they have radioactive iodine resistant (RAIR) disease. The 2015 guidelines have a new recommendation defining RAIR in four ways:

> …(i) the malignant/metastatic tissue does not ever concentrate radioiodine (no uptake outside the thyroid bed at the first diagnostic or therapeutic WBS), (ii) the tumor tissue loses the ability to concentrate radioiodine after previous evidence of RAI-avid disease (in the absence of stable iodine contamination), (iii) radioiodine is concentrated in some lesions but not in others; (iv) metastatic disease progresses despite significant concentration of radioiodine. (2015 Rec 91)

When a patient with differentiated thyroid cancer is classified as having RAIR disease, there is no indication for further radioiodine treatment (2015 Rec 91).

As RAIR disease progresses past the point that local therapy can control it, patients become eligible for either clinical trials or systemic chemotherapy. As of 2015, two multikinase inhibitors have shown improved progression-free survival in randomized clinical trials, and thus have received Food and Drug Administration approval in this setting. Because overall survival benefit has not yet been shown, and because therapeutic criteria including optimal patient selection criteria are not yet known, the 2015 guidelines recommend these drugs only for patients with RAIR that is: ''…rapidly progressive, symptomatic, and/or imminently threatening (with morbidity or mortality expected in <6 months) and not otherwise amenable to local control using other approaches…'' (2015 Rec 96). Specific details of how to administer these drugs are beyond the scope of the guidelines; local oncologic expertise is required.

Summary

The *2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Cancer* (1) is a landmark document, comprising a comprehensive overhaul of guidance compared with the 2009 version (2). The changes are vast, and include recommendations that would be expected to alter current practice for many clinicians, with new structural frameworks for approaching risk stratification, as well as new recommendations for clinical topics not previously addressed in the guidelines. Clearly, a very careful, time-intensive reading of the text is required of all clinicians in the field to absorb and weigh the merits of these many changes. For those interested in seeing how the individual recommendations have changed or evolved between 2009 and 2015, Supplementary Table S1 (Supplementary Data are available online at www.liebertpub.com/thy) aligns the specific recommendations of 2015 with corresponding recommendations, text, or lack thereof in the 2009 document.

The most obvious changes in the 2015 guidelines are structural in nature, involving the new approaches to risk stratification: the sonographic pattern-based risk groupings for nodule FNA decision making (2015 Rec 8, table 6 and figure 2), the MIRS system (2015 Rec 48B and figure 4), and dynamic risk stratification (2015 Rec 49). While these are certainly massive changes from an organizational perspective, it is comforting to note that for the most part, these revisions do not contradict current practice. Instead, integrated into the new systems, there are a small handful of incremental alterations in guidance related to specific clinical features, as discussed in the text of this review.

On the other hand, the most striking example of a fundamental change in approach is 2015 Rec 35, which greatly

increases the scope of cases for which lobectomy might be considered as the initial surgical approach for follicular cell-derived thyroid cancers. Applying this divergent recommendation will require a substantially more nuanced conversation between clinicians and their patients, with careful consideration of the subsequent loss of sensitivity of thyroglobulin testing and iodine scanning during long-term surveillance. Many patients with indeterminate FNA cytology will also have to be counseled differently, since a malignant diagnosis post lobectomy will not automatically trigger the need for completion thyroidectomy. It is expected that molecular genetic testing data will help clarify best practices in this regard, but it will be several years before enough data will accrue for specific recommendations in this area.

Conclusions

Ironically, if there is one theme that runs throughout the massive 2015 guidelines, it is that ''less is more'': as the new recommendations are adopted, less extensive surgeries will become more common, less radioactive iodine will be used either for treatment or diagnostically, and less surveillance testing will be done. Understanding how the recommendations have changed is a key goal for clinicians, as knowing when it is reasonable to do less is the only way to provide responsibly individualized therapy for patients.

Author Disclosure Statement

The authors have nothing to disclose.

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