https://doi.org/10.1590/1806-9282.20220498

Apropos of quality for fine-needle aspiration cytology of thyroid nodules with 22-, 23-, 25-, even 27-gauge needles and indeterminate cytology in thyroidology: an aide memory

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Thyroidology, a dynamic discipline, deals with a crucial and, in the meantime, delicate butterfly-shaped gland, which may demand a gracious approach[1-6]. Up-to-date management of nodular thyroid diseases necessitates the availability of several diagnostic and therapeutic modalities in order to obtain an accurate diagnosis and recommends appropriate treatment options. To this end, image-guided interventional techniques have globally been noticed and increasingly harnessed over the past four decades in thyroidology[1]. Nevertheless, an optimal needle size in order to provide an adequate and accurate thyroid fine-needle aspiration (FNA) cytology has not been established distinctly to date. We read with a great deal and respect the article by Dong and colleagues[7] entitled "Comparison of Ultrasound-Guided Fine-Needle Cytology Quality in Thyroid Nodules with 22-, 23-, and 25-Gauge Needles." The authors compared the cytology quality of sonography-guided FNA in thyroid nodules with the 22-, 23, and 25-Gauge (G) needles prospectively in a total of 480 nodules in 437 consecutive outpatients for 17 months. They declared that the 25-G needles obtained the highest scores of FNA sample quality compared with 22- and 23-G needles. Herewith, they stated that the 25-G needle should be the first choice for thyroid FNA in routine work. To the best of our knowledge, a well-accepted universal guideline for an ideal procedural technique, such as US-FNA, US-guided fine-needle capillary sampling, US-guided core needle biopsy, and optimal needle size in FNA procedures, has not been declared in thyroidology to date. Therefore, a wide range of, 20–27-G in size, needles have been used for FNA applications in different geographic regions, that is, 25–27-G in most Western countries and 21–22-G in Japan[8]. Some authors propounded that the nondiagnostic/unsatisfactory, Category I, the Bethesda System for Reporting Thyroid Cytopathology (TBSRTC), rates of 22- and 25-G needles were 18.5 and 21.0%, respectively[9]. However, many authors have demonstrated no significant difference in the adequacy rates of the samples, achieved with finer and thicker needles[10]. We reported a retrospective study, a sum of 500 nodules in 425 eligible consecutive outpatients for 38 months, involving US-FNA with a surgeon-performed US (SUS) in thyroid nodules with 27-G fine-needles with a reasonable low rate, 9.0%, of Category I, TBSRTC[11]. Although Dong et al.[7] stated that they have determined the cytology/smear qualities with four parameters by Haddadi-Nezhad et al.[12], we demonstrated, as an output of a SUS-based serial, that the delicate needle with the finest gauge[3] had possessed a reasonably low, 9.0%, nondiagnostic/unsatisfactory rate, which has been accepted globally as the crucial and significant marker for the quality of thyroid cytopathology, thereby thyroid FNA, utilizing TBSRTC, 1st[13] and 2nd[14] editions, and 2015 American Thyroid Association (ATA) Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer[5] ([A11], Recommendation 9, [A12], Recommendation 10)[15]. For this, revisiting optimal needle size for thyroid FNA to display whether not much finer and less nondiagnostic is an essential issue in thyroidology[4]. The 27-G needle, *minimum minimorum*[5], may provide cytologic quality, big gain[6], while bringing peace and quiet, no pain[6], particularly combining with our proposal of new terminology, Thy MIFNA[2,6]. Less is more?[5] *Volens nolens?*[5]

In addition, Dong et al.[7] stated that they had handled "indeterminate cytology" as Categories III and IV, TBSRTC. Nevertheless, many authorities, even the 2015 ATA Management Guidelines for Adult Patients with Thyroid Nodules and

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Conflicts of interest: the authors declare there is no conflicts of interest. Funding: none.
Received on April 01, 2022. Accepted on April 14, 2022.

Differentiated Thyroid Cancer[15], determined "indeterminate cytology" as thyroid nodules with the cytology of Categories III, IV, and V, TBSRTC, 2nd ed[14], which additionally have the higher risk of malignancies (ROMs), regarding TBSRTC, 1st ed[13], in thyroidology. *A posteriori*, would the mentioned outcomes of the respectable study be affected in case of incorporating the thyroid nodules with Category V, TBSRTC, which have a higher ROM, into their study design, initially, in terms of the terminology of "indeterminate cytology"? In fact, the issue of optimal needle size, hereinabove, merits further investigation. *Ubi dubium ibi libertas.* We thank Dong et al.[1] for their valuable study.

ACKNOWLEDGMENT

The authors thank all the participants in the article.

AUTHORS' CONTRIBUTIONS

IS: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. **DS:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

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