



## Letter to the Editor

# Comments on Kostek et al.: Deciding on Fine Needle Aspiration Biopsy in Thyroid Incidentalomas in FDG-PET/CT: Should Ultrasonographic Evaluation or FDG Uptake Be in the Foreground?

**Betul Vatankulu**<sup>1</sup>, **Sait Sager**<sup>2</sup>

<sup>1</sup>Department of Nuclear Medicine, Istanbul Aydın University Faculty of Medicine, Istanbul, Türkiye

<sup>2</sup>Department of Nuclear Medicine, Istanbul University-Cerrahpaşa, Cerrahpaşa Faculty of Medicine, Istanbul, Türkiye

Please cite this article as "Vatankulu B, Sager S. Comments on Kostek et al.: Deciding on Fine Needle Aspiration Biopsy in Thyroid Incidentalomas in FDG-PET/CT: Should Ultrasonographic Evaluation or FDG Uptake Be in the Foreground?. Med Bull Sisli Etfal Hosp 2026;60(1):136-137".

Dear Editor,

We read with great interest the article by Kostek et al.<sup>[1]</sup> which investigated the role of FDG-PET/CT and ultrasonography in demonstrating malignancy in thyroid incidentalomas and the decision to perform fine-needle aspiration biopsy. Although the authors reported low sensitivity and specificity of SUVmax values, they suggested that a cutoff SUVmax value >5.5 increases the likelihood of malignancy in thyroid incidentalomas. Furthermore, they recommended that these patients undergo fine-needle biopsy.

In their cohort of 758 patients with thyroid incidentalomas detected on FDG-PET/CT, only 118 patients (15%) underwent biopsy. Among these patients, receiver operating characteristic (ROC) curve analysis was performed. Based on this analysis, an SUVmax cutoff value of 5.5 was proposed as an indicator of malignancy. However, this methodological approach raises important concerns. Patients who undergo histopathological evaluation are typically selected for biopsy based on clinical or radiological suspicion of malignancy. Therefore, grouping only these preselected patients according to SUVmax values and subsequently determining a diag-

nostic cutoff introduces a substantial selection bias. Such an assumption would only be methodologically valid if biopsy had been performed in all patients with thyroid incidentalomas or in a randomly selected subset.

Numerous retrospective cohort studies have previously examined this issue. Although limited data suggest a possible association between increased SUVmax values and thyroid malignancy, the majority of published studies and major meta-analyses consistently report no linear or reliable relationship between SUVmax values and malignancy in thyroid incidentalomas.<sup>[2-4]</sup> In contrast to the findings of Kostek et al.,<sup>[1]</sup> and in accordance with the prevailing literature, our large single-center retrospective study including 12,796 patients demonstrated no association between higher SUVmax values and thyroid malignancy in FDG-PET/CT-detected thyroid incidentalomas.<sup>[5]</sup>

Supporting these findings, another study reported that in approximately 28% of patients with benign thyroid incidentalomas and initially low SUVmax values, SUVmax increased on follow-up PET/CT examinations. This observation suggests that neither PET/CT follow-up nor changes in

**Address for correspondence:** Betul Vatankulu, MD. Department of Nuclear Medicine, Istanbul Aydın University Faculty of Medicine, Istanbul, Türkiye

**Phone:** +90 506 227 60 36 **E-mail:** vatankulu@gmail.com

**Submitted Date:** January 3, 2026 **Accepted Date:** February 2, 2026 **Available Online Date:** March 23, 2026

©Copyright 2025 by The Medical Bulletin of Sisli Etfal Hospital - Available online at [www.sislietfaltip.org](http://www.sislietfaltip.org)

**OPEN ACCESS** This is an open access article under the CC BY-NC license (<http://creativecommons.org/licenses/by-nc/4.0/>).



SUVmax values can reliably differentiate benign from malignant thyroid incidentalomas.<sup>[2]</sup> Overall, current evidence indicates that SUVmax has low sensitivity and specificity in this clinical context and is therefore insufficient as a stand-alone parameter for predicting thyroid malignancy.<sup>[2-5]</sup> Accordingly, we recommend that malignancy risk assessment in thyroid incidentalomas detected on FDG-PET/CT should be guided primarily by ultrasonography and thyroid scintigraphy, with histopathological evaluation performed based on the results of these modalities. When the benefit-risk ratio of invasive procedures triggered solely by SUVmax values is considered, such an approach may lead to unnecessary biopsies, increased patient burden, and avoidable healthcare costs.<sup>[2,5]</sup>

In light of the available evidence, reliance on SUVmax alone to assess malignancy potential in thyroid incidentalomas appears to represent the weakest diagnostic link. Future prospective studies, ideally involving histopathological evaluation of all detected cases or randomly selected cohorts, are required to more accurately determine the true diagnostic value of SUVmax in thyroid malignancy.

#### Disclosures

**Conflict of Interest:** None declared.

**Financial support:** None.

**Use of AI for Writing Assistance:** None declared.

**Authorship Contributions:** Concept – B.V., S.S.; Design – B.V., S.S.; Supervision – B.V., S.S.; Data collection &/or processing – B.V., S.S.; Analysis and/or interpretation – B.V., S.S.; Literature search – B.V., S.S.; Writing – B.V., S.S.; Critical review – B.V., S.S.

#### References

1. Kostek M, Kostek H, Unlu MT, Caliskan O, Cakir Y, Sengul Z, et al. Deciding on fine needle aspiration biopsy in thyroid incidentalomas in FDG-PET/CT: should ultrasonographic evaluation or FDG uptake be in the foreground? *Sisli Etfal Hastan Tip Bul* 2025;59:20–7. [\[CrossRef\]](#)
2. Makis W, Ciarallo A. Thyroid incidentalomas on 18F-FDG PET/CT: clinical significance and controversies. *Mol Imaging Radionucl Ther* 2017;26:93–100. [\[CrossRef\]](#)
3. Soelberg KK, Bonnema SJ, Brix TH, Hegedüs L. Risk of malignancy in thyroid incidentalomas detected by 18F-fluorodeoxyglucose positron emission tomography: a systematic review. *Thyroid* 2012;22:918–25. [\[CrossRef\]](#)
4. Bertagna F, Treglia G, Piccardo A, Giubbini R. Diagnostic and clinical significance of F-18-FDG-PET/CT thyroid incidentalomas. *J Clin Endocrinol Metab* 2012;97:3866–75. [\[CrossRef\]](#)
5. Sager S, Vatankulu B, Sahin OE, Cinaral F, Uslu L, Baran A, et al. Clinical significance of standardized uptake values in thyroid incidentaloma discovered by F-18 fluorodeoxyglucose positron emission tomography/computed tomography. *J Cancer Res Ther* 2018;14:989–93. [\[CrossRef\]](#)