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LETTER TO THE EDITOR

Letter regarding "Complementary role of computed tomography texture analysis for differentiation of pancreatic ductal adenocarcinoma from pancreatic neuroendocrine tumors in the portal-venous enhancement phase"

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To the editor,

We read the paper by Reinert et al. with interest, which was published on January 17, 2020 [1]. The authors evaluated the potential value of CT texture analysis (CTTA) in differential diagnosis of pancreatic ductal adenocarcinomas (PDACs) from pancreatic neuroendocrine tumors (PNETs) in the portal-venous phase. Dr. Reinert and colleagues concluded that 8 of 92 texture features were statistically significant in the differentiation between PDACs and PNETs. This work is valuable as these two entities share similar imaging findings but have different prognosis and require different treatment [2]. Surgical excision remains the primary treatment for any localized PNETs and timely diagnosis confers a high 5-year survival at 75% [3]. However, the median survival of resected PDAC patients after adjuvant therapy ranges from 20.1 to 28.0 months even in optimal clinical trial conditions [4].

The objectives of this paper are valuable, but there a few methodological points worth investigating. The properties of the vascular network such as microvessel density are considered important in tumor development and work as one of the major prognostic factors in PNETs [5, 6]. In Dr. Reinert's study, PDACs and PNETs were classified into hypo-, iso-, or hyperdense in 50%/50%/0% and 45%/45%/10% of cases, respectively. Subsequently, they compared PDACs and PNETs using CTTA in the portal-venous phase. In our opinion, PDACs are generally iso- or hypodense compared to the adjacent pancreatic tissues. Typical hypervascular PNETs are easily differentiated from PDACs using conventional contrast-enhanced CT imaging features due to their high amount of vascularization. Therefore, 10% of hyperdense PNETs should be excluded when comparing PDACs with PNETs. Moreover, the authors also evaluated the value of CTTA in differentiating G1 from G2/3 tumors. In our opinion, the treatment strategies are not the same for G2/3 tumors. The 5-year survival rates differ for G1, G2, and G3 tumors (75% vs 62% vs 7%) [7]. Therefore, it would be better to assess the role of CTTA in differentiating G1/2 from G3 tumors. In conclusion, Dr. Reinert and colleagues have done interesting and valuable work; however, it would be more valuable to differentiate PDACs from PNETs after excluding hyperdense PNETs and also of G1/2 from G3 PNETs using CTTA in the portal-venous phase.

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References

1. Reinert CP, Baumgartner K, Hepp T, Bitzer M, Horger M (2020) Complementary role of computed tomography texture analysis for differentiation of pancreatic ductal adenocarcinoma from pancreatic neuroendocrine tumors in the portal-venous enhancement

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phase. Abdom Radiol (NY) 45:750-758. https://doi.org/10.1007/s00261-020-02406-9
2. Karmazanovsky G, Belousova E, Schima W, Glotov A, Kalinin D, Kriger A (2019) Nonhypervascular pancreatic neuroendocrine tumors: Spectrum of MDCT imaging findings and differentiation from pancreatic ductal adenocarcinoma. Eur J Radiol 110:66-73. https://doi.org/10.1016/j.ejrad.2018.04.006
3. Luo G, Javed A, Strosberg JR et al (2017) Modified Staging Classification for Pancreatic Neuroendocrine Tumors on the Basis of the American Joint Committee on Cancer and European Neuroendocrine Tumor Society Systems. J Clin Oncol 35:274-280. https://doi.org/10.1200/JCO.2016.67.8193
4. Kulkarni NM, Soloff EV, Tolat PP et al (2020) White paper on pancreatic ductal adenocarcinoma from society of abdominal radiology's disease-focused panel for pancreatic ductal adenocarcinoma: Part I, AJCC staging system, NCCN guidelines, and borderline resectable disease. Abdom Radiol (NY) 45:716-728. https://doi.org/10.1007/s00261-019-02289-5
5. Takahashi Y, Akishima-Fukasawa Y, Kobayashi N et al (2007) Prognosticvalue of tumor architecture, tumor-associated vascular characteristics,and expression of angiogenic molecules in pancreatic endocrinetumors. Clin Cancer Res 13:187-196. https://doi.org/10.1158/1078-0432.CCR-06-1408
6. Marion-Audibert AM, Barel C, Gouysse G et al (2003) Low microvessel density is an unfavorable histoprognostic factor in pancreatic endocrine tumors. Gastroenterology 125:1094-1104. https://doi.org/10.1016/s0016-5085(03)01198-3
7. Strosberg JR, Weber JM, Feldman M, Coppola D, Meredith K, Kvols LK (2013) Prognostic validity of the American Joint Committee on Cancer staging classification for midgut neuroendocrine tumors. J Clin Oncol 31:420-425. https://doi.org/10.1200/JCO.2012.44.5924