Association of multifocality, tumor number and total tumor diameter with clinicopathological features in papillary thyroid cancer

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Introduction
In this study, we aimed to evaluate impact of multifocality, tumor number and total tumor diameter on clinicopathological features of PTC.

Methods
➢ Medical records of 912 patients who underwent thyroidectomy and diagnosed with PTC were reviewed retrospectively. Patients were grouped into 4 according to number of tumoral foci: N1 (1 focus), N2 (2 foci), N3 (3 foci) and N4 (≥ 4 foci). The diameter of the largest tumor was considered as the primary tumor diameter (PTD) and total tumor diameter (TTD) was calculated as the sum of the maximal diameter of each lesion in multicentric tumors.

Results
➢ Capsular invasion, extrathyroidal extension and lymph node metastasis were significantly higher in patients with multifocal tumors compared to patients with unifocal PTC. As the number of tumor increased, extrathyroidal extension and lymph node metastasis also increased (p=0.034 and p=0.004, respectively).
➢ The risk of lymph node metastasis was 2.287 (OR=2.287, p=0.036) times higher in N3 and 3.449 (OR=3.449, p=0.001) times higher in N4 compared to N1. Capsular invasion, extrathyroidal extension and lymph node metastasis were significantly higher in multifocal patients with PTD ≤ 10 mm and TTD > 10 mm than unifocal patients with tumor diameter ≤ 10 mm (p<0.001, p=0.001 and p=0.001, respectively).
➢ There was no significant difference in terms of these parameters in multifocal patients with PTD ≤ 10 mm and TTD > 10mm and unifocal patients with tumor diameter > 10 mm (Figure 1).

Conclusion
➢ In this study, increased tumor number was associated with higher rate of capsular invasion, extrathyroidal extension and lymph node metastasis. In a patient with multifocal papillary microcarcinoma, TTD > 10 mm confers a similar risk of aggressive histopathological behavior with unifocal PTC greater than 10 mm.