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## FREQUENCY AND CLINICAL SIGNIFICANCE OF INCIDENTAL SECONDARY NEOPLASMS IN PET-CT IMAGES OF MULTIPLE MYELOMA PATIENTS

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### BACKGROUND

Incidental finding (IF) is a mass or lesion detected during imaging performed for another reason. The size, appearance or fluorodeoxyglucose (FDG) uptake status of IFs may give an idea that they are a neoplastic formation. Positron Emission Tomography-Computed Tomography (PET-CT) is a hybrid imaging method that includes functional and morphological evaluation. The combined use of the two methods increases the accuracy of diagnosis. PET-CT is routinely used for staging and treatment response assessment in multiple myeloma (MM).

This study aimed to evaluate the prevalence of non-myelomatous IF (nM-IF) detected in PET-CT at diagnosis and follow-up in MM patients, the frequency of incidental secondary neoplasms and their clinical importance in patient management.

IFs in PET-CTs taken at the time of diagnosis and during follow-up of MM patients followed up in the hematology outpatient clinic between January 2020 and January 2025 were evaluated. Patients with another cancer were not included in the study. All findings not related to MM disease were included in the analysis and defined as nM-IFs. The clinical significance of each nM-IF was graded using a 5-point scoring system, termed nM-RADS, ranging from nM0 to nM4, with the score increasing according to the clinical impact of the nM-IF. Because of its clinical importance in indicating secondary neoplasms, radiological findings, clinical approach and outcomes of nM4 lesions were examined in detail.

### RESULTS

A total of 512 nM-IFs were detected in 244 MM patients. There was no IF in PET-CT of 55 patients. The frequency of nM-IF was found to be 77% in the entire group. The median age was 66 years. 110 of the patients were female (45%). 95 PET CT scans were examined at diagnosis and 219 at follow-up. An average of 2.09 nM-IF was detected per patient. The distribution of IFs was found as 0 nM 0 (0%), 19 nM1 (3.7%), 172 nM2 (33.5%), 246 nM3 (48%) and 75 nM4 (14.6%). Of the 75 nM4 lesions, 34 were further investigated with a preliminary diagnosis of secondary neoplasia, and 8 of them were diagnosed with secondary malignancy. The incidence of malignancy was found to be 1.5% in all IFs. 4 of these were gastrointestinal malignancies, 2 respiratory system malignancies, and 2 thyroid malignancies.

In 34 patients who underwent further examination, the median SUV-MAX values of malignant and non-malignant lesions were 19.4 and 7.4 respectively. It was thought that the SUV MAX value could predict malignancy depending on the localization and size of the lesion.

### CONCLUSIONS

It is known that the frequency of secondary primary cancer is increased in patients with hematological malignancies, including MM. Therefore, it is necessary to be aware of and examine in detail the findings that raise the suspicion of secondary malignancy, either clinically, laboratoryly or through imaging methods.

### REFERENCES

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