Significance of incidental 18F-FDG accumulations in the gastrointestinal tract in PET/CT: correlation with endoscopic and histopathologic results

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This study was undertaken to identify the clinical value of incidentally detected lesions (IDLs) in the gastrointestinal tract (GIT) with (18)F-FDG PET/CT.

METHODS: The reported database of 3,281 patients who underwent partial-body (18)F-FDG PET/CT scans from April 2001 to September 2003 was reviewed. Patients with incidental (18)F-FDG accumulations in the GIT that were associated with concomitant abnormal soft-tissue density or wall thickening on the native CT were evaluated. Incidental PET/CT findings were correlated with endoscopic and histopathologic results.

RESULTS: According to our selection criteria, 98 (3%) of the 3,281 patients had an IDL of the GIT on (18)F-FDG PET/CT. Correlative endoscopic findings were available in 69 (70%) of 98 patients. Of these, 13 patients (19%) were harboring newly occurring cancers of the GIT in addition to preexisting aerodigestive tract tumors (n = 12) and malignant melanoma (n = 1). Twenty-nine (42%) patients were identified with precancerous lesions, such as advanced colonic adenomas (n = 27), Barrett’s esophagus (n = 1), and intestinal metaplasia of the gastric mucosa (n = 1). Inflammatory and other benign GIT lesions were detected in 12 (17%) and 6 (8%) patients, respectively. In 9 (13%) patients, PET/CT was false-positive, showing normal findings in subsequent endoscopic examinations. In 20 (28%) of 69 patients, PET/CT findings had a relevant impact on the clinical management. Twenty-nine (30%) of the 98 patients were not subject to a further endoscopic examination because of the extent and nature of the primary tumor (n = 17), loss to follow-up (n = 7), death shortly after PET (n = 3), and patient unwillingness (n = 2).

CONCLUSION: Although IDLs of the GIT on (18)F-FDG PET/CT scans are found only in about 3% of cases, they are associated with a substantial risk of an underlying cancerous or precancerous lesion. Early identification of these occult lesions may have a major impact on the patients' management and outcome.

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