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Diagnostic compatison of 18-FDG-PET with spiral volumetric computed tomography for the diagnosis of pancreatic cancer: A diagnostic dilemma

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Abstract

A pancreatic cancer, a killer with unknown etiology, still remains the fourth leading cause of cancer-related deaths in the United States, ranking second to colorectal carcinoma as a cause of death from gastrointestinal malignancy. Every year 112000 Americans die of gastrointestinal neoplasms, cancer of the pancreas accounts for 22 percent of these deaths. Pancreatic cancers are of two types, namely endocrine pancreatic tumors and non-endocrine tumor s (Adenocarcinomas). Adenocarcinoma, in fact, accounts for 95 percent of all pan-creatic cancers. A small number of patients (all males) suspected of having pan-creatic malignancies, based on history, physical examinations, and laboratory findings, were referred for evaluation with positron emission tomography with 18-Fluoro-Deixy-Glucose (18-FDG-PET) and spiral volumetric computed tomography (SVCT), who were scheduled for surgery. Patients were randomized into two groups of almost identical number: one group underwent PET scan and the other group underwent spiral CT scan. An equal number of patients with similar age- matched and with limited disease, who showed no evidence of pancreatic disease, served as control subjects. Written informed consents were obtained from all participants. All our patients were histopathologically proven to be adenocarcinomas. A histopathological diagnostic verification of a suspected abnormalities is warranted, since therapeutic interventions require information about pathological processes which cannot be confirmed by imaging techniques alone. The imaging is, however, necessary to appreciate the extent and course of the disease that can be monitored to determine whether and when aggressive intervention is necessary to avoid catastrophic clinical outcome. Dispite recent highly sophisticated and technical advancements, pancreatic carcinoma still continues to pose a diagnostic and therapeutic challenge. This retrospective study indicates the feasibility and clinical potential of FDG-PET for the detection and differ entiation of pancreatic malignancies. Technical aspects of both imaging modalities will be highlighted and results of this retrospective study, which is still under investigation, will be compared and discussed. The purpose of this presentation was to assess retrospectively the clinical utility of functional as well as the structural imaging methods, such as 18-FDG-PET and SVCT respectively, in the detection of suspected pancreatic neoplasms, and to compare the value of quantitative image interpretation of these two fairly newer advanced imaging techniques that are integrated in the medical imaging armamentarium.

Key words: Pancreatic cancer; Positron emission tomography; Spiral volumetric computed tomography

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