

ABSTRACTS

Unparalleled contributions of FDG-PET imaging to medicine over the past 4 decades

Abass Alavi

Department of Radiology, Perelman School of Medicine, Hospital of the University of Pennsylvania, Philadelphia, USA

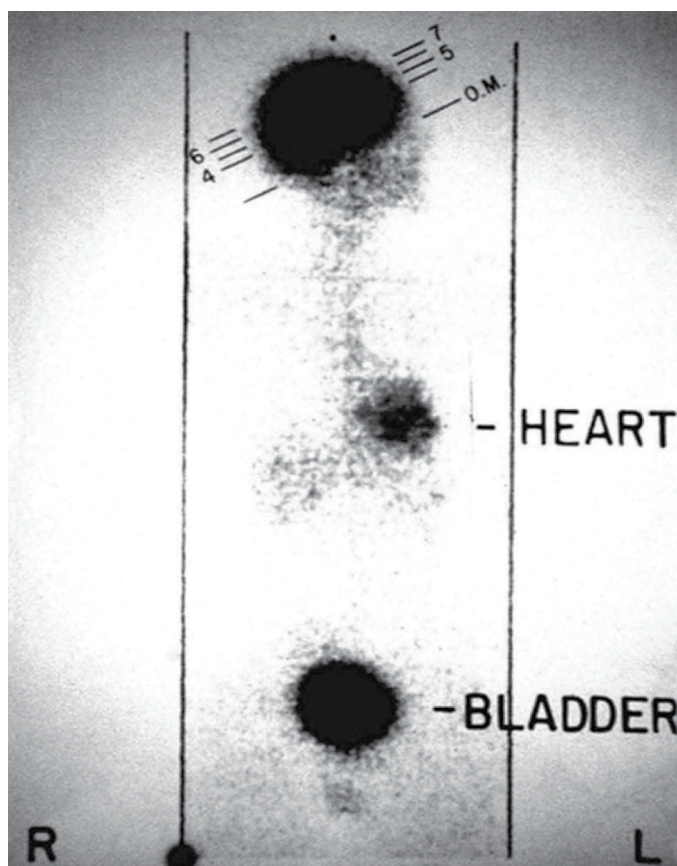
Corresponding author: Abass.Alavi@uphs.upenn.edu

Background: Positron emission tomography (PET) with 2-deoxy-2-[¹⁸F]fluoro-D-glucose (FDG) is currently one of the most widely used imaging modalities. Both the technology and the radiopharmaceutical were conceived in the 1970s, facing a variety of challenges. Nowadays, a variety of PET techniques using partial volume correction and segmentation allow accurate quantification of metabolic activity in different tissues of the human body in normal and disease states.

Content: The presentation reviews the long journey of FDG-PET from its origin up to date with a large number of case illustrations, including the first images obtained personally while working on developing the modality in the 1970's. A brief summary of the imaging equipment and its evolution as well as the main contributions of FDG-PET imaging to medical practice and research activities are also discussed.

Conclusion: FDG-PET-CT imaging has had a substantial impact on research and on the day to day practice of medicine. This has resulted in minimizing pain and suffering for millions of patients and in reducing the cost of health care worldwide.

Key words: Positron emission tomography, fluorodeoxyglucose, FDG-PET evolution.



The first whole body human FDG-PET scan performed by Abass Alavi in 1976 at the University of Pennsylvania by employing a conventional rectilinear machine as the only option at that time.