Radiation Dose of PET/CT

Abstract:

Sir,

It has come to our attention recently that some information in the general media available to prospective patients regarding the radiation dose associated with PET scans is inaccurate. While we as members of the medical profession support all efforts by the media and private concerns to empower patients, it is imperative that the information they receive be correct.

The radiation dose of a PET scan is not insignificant. Furthermore, dual modality PET/CT is now routinely performed rather than PET scan alone. This exposes the patient to a combined PET and CT radiation dose and though the dose differs with patient size and CT quality, the radiation exposure is substantial. Typical doses in PET/CT have been reported as 5-7mSv for the PET scan, with a further 1-4mSv if a low dose CT scan accompanies the PET scan or 15-19mSv with a diagnostic CT scan. 

This is compared with the 0.02mSv received during a routine chest x-ray and also the 2.2mSv dose that an average member of the public would receive yearly from natural background radiation. While radiation doses used for PET/CT examinations are much too low to produce immediate harmful effects, such as skin burns or radiation sickness, low dose radiation is thought to increase the chance of cancer occurring many years or even decades after the radiation exposure. Currently in this country PET/CT is primarily involved in the diagnosis and follow up of neoplastic lesions. This subset of patients will be particularly concerned about risks to their health but should be aware that the benefits they will receive from the greater diagnostic information provided by these studies greatly offsets the associated radiation risk.

In short, we applaud private concerns who wish to aid with the dispersal of medical information. We realise that patients are often apprehensive, even fearful of tests that they do not understand. It is however important that these patients are protected from inaccurate or misleading information and that they are fully informed of both the benefits and risks associated with all medical procedures.

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References