

Evaluating the Radiation Dose Involved in Interventional Radiology Procedures

Authors : Kholood Baron

Abstract : Radiologic interventional studies use fluoroscopy imaging guidance to perform both diagnostic and therapeutic procedures. These could result in high radiation doses being delivered to the patients and also to the radiology team. This is due to the prolonged fluoroscopy time and the large number of images taken, even when dose-minimizing techniques and modern fluoroscopic tools are applied. Hence, these procedures are part of the everyday routine of interventional radiology doctors, assistant nurses, and radiographers. Thus, it is important to estimate the radiation exposure dose they received in order to give objective advice and reduce both patient and radiology team radiation exposure dose. The aim of this study was to find out the total radiation dose reaching the radiologist and the patient during an interventional procedure and to determine the impact of certain parameters on the patient dose. Method: The radiation dose was measured by TLD devices (thermoluminescent dosimeter; radiation dosimeter device). Physicians, patients, nurses, and radiographers wore TLDs during 12 interventional radiology procedures performed in two hospitals, Mubarak and Chest Hospital. This study highlights the need for interventional radiologists to be mindful of the radiation doses received by both patients and medical staff during interventional radiology procedures. The findings emphasize the impact of factors such as fluoroscopy duration and the number of images taken on the patient dose. By raising awareness and providing insights into optimizing techniques and protective measures, this research contributes to the overall goal of reducing radiation doses and ensuring the safety of patients and medical staff.

Keywords : dosimetry, radiation dose, interventional radiology procedures, patient radiation dose

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