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Lens exclusion in CT head examinations

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CT head examinations may result in significant and unnecessary irradiation to the lens of the eye, one of the most radiosensitive tissues in the body. Thus, increasing the likelihood of damage and accelerating cataract formation. Standard CT head examinations expose the lens to approximately 25-103 mGy. The International Commission on Radiological Protection (ICRP) estimates opacity formation with doses as low as 0.5 Gy. A retrospective study of CT head scans for a 2 week period in November 2015 was conducted. The indication and age of patient were noted, and images were analyzed to identify lens inclusion. Of the 321 scans analyzed, 62% had the lens included, with 52% of this group under the age of 65. Of the 48% where the lens was not included, indications were varied, ranging from head injury to seizures. This suggests exclusion of the lens is possible even in cFlamingo 2enging clinical circumstances. Common reasons for mal-positioning includes confusion and arthritis, which are generally less prominent features in this age group. Departmental teaching on positioning of radiographic baseline, setting region of interest and use of head rests to achieve optimum positioning has led to radiographers obtaining anatomically sound images without the need to angulate the gantry incurring a radiation dose penalty; with promising initial re-audit results. Using our findings a new protocol is being developed, with the hope to reduce the unnecessary radiation burden to the lens during CT head scans minimizing the risk of visual impairment.

Biography

Mariyah Selmi is a Junior Doctor at The Royal Oldham Hospital, Manchester, United Kingdom. She has done MBChB in Imaging Sciences from Kings College London. She has multiple publications and international presentation in the field of Radiology with a special interest in Radiation Awareness and Dosimetry.

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