

Simple reduction technique decreases radiation dose associated with CT scans of the head

May 6 2010

Z-axis modulation can significantly reduce the radiation dose associated with unenhanced computed tomography (CT) scans of the head, according to a study to be presented at the ARRS 2010 Annual Meeting in San Diego, CA. Z-axis modulation is a simple technique that radiologists can use to adjust the radiation dose and obtain optimal image quality during CT scans.

"As radiologists, we are constantly looking for ways to reduce the radiation dose associated with advanced imaging exams such as CT. Our study looked at the effects of z-axis modulation for CT head protocols on patient dose and image quality," said Thomas Zacharia, MD, lead author of the study.

The study, performed at Penn State Hershey Medical Center in Hershey, PA, included 100 unenhanced CT head examinations without dose modulation, and 100 unenhanced studies with z-axis modulation. "For unenhanced CT head examinations, the radiation dose was reduced by approximately 35 percent by using z-axis dose modulation, while image quality and noise were unaffected," said Zacharia.

"Utilization of the z-axis modulation technique for CT head examinations offers significant [radiation dose](#) reduction while image quality is optimally obtained," he said.

Provided by American College of Radiology

Citation: Simple reduction technique decreases radiation dose associated with CT scans of the head (2010, May 6) retrieved 25 April 2024 from

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