

Reduced Physician Radiation Exposure during Coronary Angiography with New Radiation Protection Technique

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Objective: A new technique of physician radiation protection during coronary angiography was evaluated in order to assess the associated reduction in physician radiation exposure compared to conventional methods.

Materials and Methods: This new technique consisted of using a body length floor mounted lead plastic panel to reduce exposure during all cine angiography and most fluoroscopy along with an extension bar attached to the table which allowed manual movement of the table for panning. A lead apron, thyroid shield, eye glasses and face mask were used in both techniques but a ceiling mounted shield was used in the conventional technique. Radiation dosimetry badges measured radiation exposure in 25 cases using the new technique and in 25 cases using conventional protection. All 50 angiograms were performed by the author using the femoral approach. Radiation badges were placed outside and inside the face mask, outside and inside the thyroid shield, on the right and left arm, outside and inside the lead apron and on the right and left leg. Radiation exposure was measured using conventional shielding and was compared with exposure and percent reduction in exposure using the new technique.

Results: A new technique of physician radiation protection showed a reduced exposure of the head, arms and legs of approximately 90% compared to the conventional technique. Exposure of the thyroid and torso (under the lead apron) was minimal with both techniques.

Conclusion: Enhanced physician radiation protection during coronary angiography is readily achievable with this new technique.