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29<sup>th</sup> Annual Scientific Meeting

LATE BREAKING ABSTRACTS

Scientific Session 22- LBA  
*New Technologies in Radiation Protection*  
Saturday – March 27, 2004 – 4:30 PM –6:00 PM  
Room: Flagstaff 2

Abstract No. 509

4:52 PM – 5:03 PM

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*Cataract in Interventional Radiology – An Occupational Hazard?*

**Purpose:** The lens of the eye is among man's most radiation sensitive tissues. Ionizing radiation typically results in characteristic posterior subcapsular (PSC) cataract formation. This study was conducted to evaluate the degree to which radiation cataracts represent an occupational hazard to interventional radiologists.

**Materials and Methods:** Fifty-nine practicing interventional radiologists consented to take part in the study. The subjects' ages ranged from 29 to 62 years and the level of experience in the field spanned 5 to 36 years. They were asked to complete a questionnaire related to work circumstances and potential cataractogenic confounders. Once maximal dilation of the pupil was obtained, a special imaging system (Nidek EAS1000, based on the Scheimpflug principle) was used to document each eye. Both, anterior segment images in five meridians and retroillumination images were acquired. These were subsequently analyzed using the instrument's proprietary programs.

**Results:** Of the 59 men and women examined, 31 were free of any lens opacities suggestive of radiogenic origin. Twenty-two individuals showed small paracentral dot-like opacities in the PSC region of the lens, consistent with early signs of radiation damage. PSC cataracts were documented in five individuals: one of 10 eyes had cataract surgery prior to our study. Early onset in one individual (under age 40 years) was likely due to unusually close proximity to the fluoroscope. In 16 of the individuals with lens changes, their degree differed in the two eyes.

**Conclusions:** An increased prevalence of radiation related lens opacities is clearly present in interventional radiologists. The frequency and severity of PSC cataracts increased in our cohort both as a function of age and active years in practice. The asymmetry of lens changes may be explained by operator position in relation to the fluoroscope.