Why the Escalated Interest in Radiation Protection?

Edward B. Diethrich, MD
Phoenix, Arizona
Disclosures

Nothing to Declare
It May be My Fault
Michael E. DeBakey Visits Europe
Serendipity

Where one makes desirable discoveries by accident or sagacity

Sagacity- More farsighted penetration and judgement
Cid dos Santos - First Aortogram
1965 – Meeting with Hans Moore, Philips Representative
Mission!

High-quality angiography in the operating room

1971, from the University of Munster, Germany, the Philips ceiling-mounted hybrid angiography operating suite
1st Hybrid Operating Room

1971 Arizona Heart Institute
What Price Did We Pay for these Radiographic Images and Low Dose Ionizing Radiation Exposure?
Scattered Radiation Exposure

7x’s* across all levels of complexity

Mobile Imaging Systems (MI)

Fixed Imaging Systems (FI)
Excessive radiation exposure

- Right brain tumor
- Bilateral cataracts
- Right carotid plaque

=’s

Excessive radiation exposure
The Evolution of Endovascular Therapy...
The Story of its Pioneer

Dr. Ted Diethrich, founder of the Arizona Heart Institute and Foundation, reflects on his 50-year ride. A story filled with twists, turns, battles and fascinating encounters that will inspire, amuse and convince you that anything is possible if you persevere.

Profits donated to the International Society of Endovascular Specialists.
Preop
Brain
Tumor

August 28, 2012

Oligodendroglioma
4 month post chemotherapeutic Gliadel wafer implant and recurrent tumor resection

- Lightning flashes
- Moving characters

Pararesection edema
ORSIF
Organization for Occupational Radiation Safety in Interventional Fluoroscopy
Diethrich’s memoirs will stress dangers of radiation

Following the publication of an article about the impact of radiation exposure on endovascular specialists in the September 2015 issue of Vascular News, pioneer Edward B. Diethrich has shared with our team a chapter of his new book.

Since he first began using radiographic equipment in the 1970s, Diethrich has developed right and left eye cataracts that required operation, highly calcified plaque in his right carotid artery that required an operation, and a right-sided brain tumor. It was in 2012, while recovering from his first brain surgery, that he “began to wonder if all of these were consequences of radiation exposure. Was this the common denominator in my personal case?”

In the chapter, Diethrich describes how he and the Organization for Occupational Radiation Safety in Interventional Fluoroscopy (ORSIF) helped expose the dangers of chronic low-dose radiation exposure in the operating room by producing a documentary chronicling his own radiation-related illnesses.

The impact was immediate. “Once the ORSIF film was released,” Diethrich writes, “the genie was out of the bottle. The problems of radiation imaging were suddenly exposed everywhere.”

Diethrich notes that the film also encouraged researchers to look at how recent advances in technology may have altered the doses and locations of radiation faced by surgeons. As he explains in the chapter, “Most recently I reviewed a paper from London, UK, that pointed out how the radiation problem, particularly to the head, may become even more prevalent. The completion of the latest endovascular treatment approaches to aortic disease has created radiation exposure times, which can be escalated by angulation of the C-Arm to obtain various views. This may not be widely appreciated but certainly adds an increased risk to the operator. Head protection during these procedures has not been addressed with any intensity.”

The full memoir, titled “SLED: Serendipitous Life of Edward Diethrich” will be released soon.
Radiation Jeopardy Goes Viral!
Looks good, but ill protected
A better protected physician

Ready to walk on the moon!
Strategy – Reducing the Gap

Delivery of Technology

Radiation Exposure
Strategy – Reducing the Gap

Fluoroscopy
Angiography
CT
MRI

Radiation Exposure

Fusion

Explore Robotics
REDUCE RADIATION EXPOSURE
CORPATH® ROBOTIC-ASSISTED VASCULAR INTERVENTIONS

NOW FDA CLEARED for Peripheral Vascular Interventions

PRECISION ROBOTIC ARM

PROTECTION RADIATION-SHIELDED WORKSTATION
Thank you,
Edward B. Diethrich
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