

# **P**ACING **A**ND **C**LINICAL **E**LECTROPHYSIOLOGY



## **NASPE Abstracts & Program**

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**ABSTRACT SESSION 30: BRADYCARDIA IV: Pacemaker Implantation Techniques  
Saturday, May 5 2001, 8:00 AM - 9:30 AM**

**175**

**Use of a Sterile, Disposable Radiation-Absorbing Shield Reduces Occupational Exposure to Scatter Radiation during Pectoral Device Implantation**

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**BACKGROUND:** Occupational exposure to scatter radiation is a significant concern among practitioners who implant pectoral pacemakers and cardioverter-defibrillators due to close proximity to the beam source and difficulties utilizing pull-down shields in a sterile field. **OBJECTIVE:** To evaluate the efficacy of a sterile, disposable radiation-absorbing shield in reducing occupational radiation exposure during pectoral device implantation. **METHODS:** A single practitioner in one laboratory performed forty consecutive pectoral device implantations using pulsed fluoroscopy and AP views. The first 20 cases (Group A) were performed without special shielding. The subsequent 20 cases (Group B) were performed using sterile bismuth-filled drapes placed just lateral to the incision and outside the fluoroscopic field of view to avoid feedback increases in beam intensity. Operative technique in the two groups was otherwise identical. Radiation exposure was measured using collar badges. **RESULTS:** Despite a slightly higher total fluoroscopy time in the Group B cases, shield use was associated with a 77% reduction in radiation dose. There was an 80% time-adjusted reduction (see Table). The increased Group B fluoroscopy time, which was statistically insignificant, resulted from case complexity and was unrelated to shield use. **CONCLUSIONS:** A sterile, disposable radiation-absorbing drape placed lateral to the incision greatly reduces occupational exposure to scatter radiation during pectoral device implantation. For high-volume operators, large reductions in exposure can be achieved.

Fluoroscopy Times and Radiation Doses

	Total Fluoro Time (seconds)	Radiation Dose (mrem)	Time-adjusted Dose (mrem/sec)
Group A (no shields)	1288*	60†	0.047†
Group B (shields)	1565*	14†	0.009†

\*p=NS

†p<0.05