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Complete Nose Closure and Radioaerosol Lung Ventilation Imaging

TO THE EDITOR: We wish to share with *Journal* readers an unusual technical pitfall in the performance of radioaerosol lung ventilation imaging. A 28-yr-old black female with past medical history of pulmonary embolism presented with acute shortness of breath after stopping oral anticoagulants and was referred for lung ventilation and perfusion study. A standard nose-clip could not be applied due to presence of a decorative stud in the patient's right nostril and the patient instead agreed to manually occlude the nostrils. After standard preparation of the aerosol delivery system (Aerotech I aerosol unit, CIS US Incorporated, Bedford, MA), the patient was instructed to breathe normally through the mouth-piece for 5 min. At the conclusion of this period, inspection of the gamma-camera persistence scope revealed virtually complete absence of radioaerosol in the lung fields, tracheo-bronchial tree and mouth with the majority of the activity confined to the nebulizer. Because of suspicion that the nebulizer was defective, a second unit was used with repeat failure of radioaerosol distribution. On further analysis, it was suspected that protrusion of the nose-stud was interfering with proper occlusion of the nostril leading to predominantly nose rather than mouth breathing, thereby limiting delivery of ^{99m}Tc-DTPA to the lungs. The suspect nose-stud was removed and a standard nasal clip placed on the patient, resulting in a subsequent high-quality ventilatory image of the lungs.

The importance of complete closure of the nose is not discussed in the delivery-device package insert (1) or in an extensive analysis of radioaerosol delivery (2). It appears that proper occlusion of the nose is an important factor for adequate aerosol delivery to the lungs and presence of nasal jewelry can interfere with this process.

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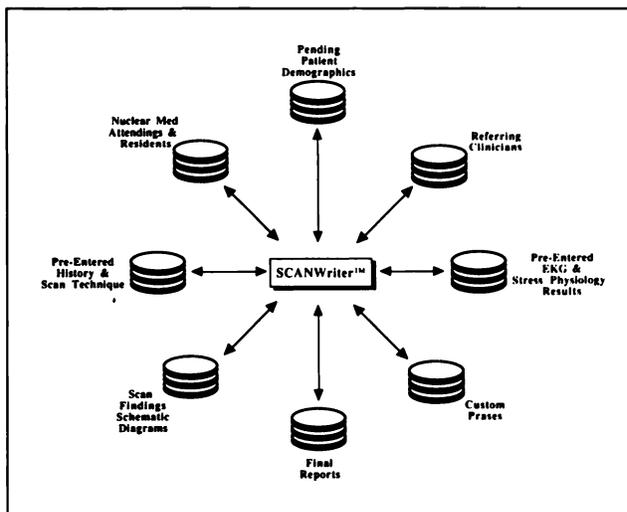


FIGURE 1. Internal database engine of the SCANWriter™.

Advantages and Disadvantages of the SCANWriter™ Report Generating Program

TO THE EDITOR: I read Dr. Sanger's article on a nuclear medicine report-generating program, the SCANWriter™, with personal interest (1). I have been a beta site evaluator for 2 yr. Although I am a die-hard MS-DOS user, the SCANWriter™ is far easier than the typical Macintosh-based program. Also, he omitted and downplayed several items that I would like to comment on.

The system is very easy to learn and use without extensive computer knowledge. It is so easy to use that my research assistant, a college sophomore and MS-DOS user, learned the system in a single day.

An important aspect not discussed is the database capability for research. The system has the potential capability to perform disease or result searches with very little effort. I am associated with three teaching institutions where there are no patient or study databases for research. Two institutions keep a log book and use the pharmacy log for research capability.

The Macintosh computer can double as a desktop computer with dictation capability plus word processing, spreadsheet, database and graphics. The typically small reading room might house only a single computer. This computer with all of its capabilities could meet all these needs.

One potential problem not discussed is the lack of portability, which might be overcome with new powerful notebook computers. This has not been a problem in my experience. However, the need might exist for those covering multiple facilities.

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REPLY: I would like to thank Dr. Spieth for his comments regarding the SCANWriter™ report generation system. Being a long-time, dedicated Macintosh™ user and developer, I am not

surprised that Dr. Spieth and his staff have found it so easy to learn!

Dr. Spieth notes that the database capabilities of the system were somewhat deemphasized in the article. Therefore, I would like to briefly describe the current and future database functionality of the SCANWriter™ system. The system contains an internal database engine that stores a variety of scan-related and patient-related data in eight separate database tables (Fig. 1). While these tables exist primarily to support the system's report-generation function, Dr. Spieth is quite correct in suggesting that much of this data also would be very useful in the support of research activities. Furthermore, I would suggest that as governmental and institutional regulatory concerns and requirements for documentation become more and more burdensome, SCANWriter™'s ability to support and eventually generate Quality Assurance and Quality Improvement reports will become a valuable asset to the clinical nuclear physician or cardiologist as well.

To facilitate the growth and development of this aspect of the program's database functions, I have recently expanded and improved the internal database capabilities of SCANWriter™, in order to make these data more easily accessible by secondary

analysis and reporting software programs. All useful data contained within SCANWriter™, including the user-inputted data related to patient demographics, clinical indications and scan technique, as well as scan interpretation findings, comments and impressions soon will be stored in industry-standard, xBase format files. This will open up these important data to a wide variety of generic analysis programs currently available on both the Macintosh® and IBM-compatible platforms, although SCANWriter™ itself will only execute on a Macintosh™ computer. In addition, I am in the process of expanding the scope of these database files to include fields for storage of correlative information, including cardiac catheterization results, histo-pathology results, etc. It is my intention to take SCANWriter™ significantly beyond a basic report generator. It will be able to also produce useful quality assurance and research reports, without need for any external software programs, although its standard format files will not preclude such external data analysis.

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