sensitivity caused by reduced scanning time must result in the reduced statistical significance of abnormal areas.

Such reduction in significance may not always be immediately apparent. For example, an abnormality of 20 standard deviations (s.d.) significance would be reduced to one of 10 s.d. by a fourfold reduction in scanning time—still a highly significant abnormality. However, a 5 s.d. abnormality would be reduced to 2.5 s.d. and would almost certainly be missed.

The authors also suggest that visual improvements in general can be obtained by minification. This may be true but it should not be used as an excuse for sacrificing statistical accuracy.

There is no doubt that reducing scanning time is important in improving patient management. If it can be shown that no abnormalities are missed by reducing sensitivity because, for example, abnormalities below a certain size and activity do not present clinically, then reducing scanning time may be permissible. Otherwise, scanning time ought not to be reduced without increases of sensitivity in other directions, e.g., increased administered activity or improvements in collimator design.

I wish to thank Dr. H. Miller, Dept. of Medical Physics, Sheffield, England, and Professor J. R. Mallard, Dept. of Medical Physics, Aberdeen, Scotland, for drawing my attention to this point.

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REFERENCES


AUTHORS' REPLY

We entirely agree with Mr. Barber that minification cannot increase the information content of a scan. This claim was not made or implied anywhere in our paper. In fact, we stated that, "the limiting factor must be the information density per unit area scanned," and the title stated that we were proposing "a practical compromise" for bone scanning.

In the daily running of a busy clinical laboratory, as in most routine human endeavors, one must be primarily concerned with what is feasible. This often necessitates compromise with what would be ideally desirable; indeed, the ordinarily recommended information density of 100–200 counts/cm² for 85Sr bone scanning is already a compromise. Scanning only localized areas of bone has limited clinical value. Since whole-body bone scanning with 85Sr is not routinely feasible at the above information density, we therefore attempted to see whether: (A) the visual improvements gained by minification (1) could in practice reasonably compensate for decreased information with increased scan speed and (B) simple photography was an adequate way to achieve this minification. In our admittedly small series we did not, in fact, miss any of the 28 positive areas by this technique.

When 85Sr still remains the only agent widely available for bone scanning, we believe our study suggests that whole-body bone scanning with miniturization is worthwhile when it might otherwise be quite impractical. The option of rescanning questionable and/or suspicious areas at a higher information density is still available.

Thus, while we completely agree with the theoretical considerations raised by Mr. Barber, we feel the philosophy implied is unnecessarily rigid when the practical alternatives are limited.

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REFERENCE


QUALITY CONTROL OF RADIOHPARMACEUTICAL KITS

In the past year there has been a rapid proliferation of commercial kits for the on-site preparation of radiopharmaceuticals, especially those labeled with 99mTc. Even though this provides a greater variety of radiopharmaceuticals to the nuclear medicine clinician, it has put a new dimension on an old