

concerning the protection of the patient. One is left only with the reassurance that there are apparently little or no significant biological implications associated with diagnostic ultrasound exposure at current levels. This is, in truth the present state of knowledge, but I doubt that the inclusion of this chapter would of itself be sufficient cause to own this report. It is to be hoped that a future report (NCRP Report number 74 entitled Biological Effects of Ultrasound Mechanisms and Clinical Implications) will provide more specific guidance concerning the safety of diagnostic ultrasound.

Dr Francis A Duck
Medical Physics Department
Royal United Hospital
Combe Park
BATH BA1 3NG
ENGLAND
September 1984

Technology of Nuclear Magnetic Resonance

14th Annual Symposium on the Sharing of Computer Programs and Technology

Editors: Peter D Esser, R. Eugene Johnston

Published by the Society of Nuclear Medicine 1984
ISBN 0-932004-21-0 (PBK)

Previous annual symposia by the SNM have concerned nuclear medicine procedures only. That this the 14th annual symposium should be solely dedicated to a new imaging modality, Nuclear Magnetic Resonance, reflects the real interest shown by practitioners of nuclear medicine in this technique.

This collection of papers serves as both an introduction to the subject generally and as an opportunity to assess some recent developments in the instrumentation in this field. The first four review articles give an overview of the technique, and for those not familiar with the techniques are excellent. As well as clear descriptions of the theory of NMR, there are interesting practical examples. The effect of imaging whilst the door of the screened room is open is shown to highlight the control of environmental factors necessary for good NMR.

The next four papers contain the kernal of the subject which is the relationship between image appearance and the imaging parameters such as pulse sequence, T1 and T2 extraction etc. The physics of this section is complex and this part of the proceedings will probably only be of value to medical physicists. This area is however of vital importance in these early days of NMR imaging. Standardised image parameters should be the goal of different manufacturers so that the medical utility of NMR can be most optimally determined. It is important to understand the relationship between image appearance and the imaging parameters. This is clearly revealed in this section with good use of examples.

Medical applications feature in the next section on NMR imaging of flow and motion. The gated cardiac images are impressive. The detection of the Rt. Atrial tumour on P144 shows the diagnostic power of this technique.

The remaining section deals with new developments in NMR. The use of NMR to do in-vivo spectroscopic analysis is particularly exciting, bringing the goal of non invasive, in-vivo pathological analysis one step nearer. This is reviewed in this section.

There is also an interesting purpose built breast imager containing some excellent images. Whilst truly a non harmful, non invasive technique, the cost of equipment will prohibit the use of NMR for breast screening.

The last section contains detailed information on the architectural requirements for any NMR site. Anyone involved in site planning for NMR would require this book just for this section alone containing as it does all the potential pitfalls of poor site planning.

Overall the reviewer considers this mixed text a valuable textbook for anyone involved with, or likely to get involved with NMR. The emphasis of the book is on the physics of NMR and this can be complex at times. This is however unavoidable and should not discourage allied groups of imaging practitioners off this textbook to give a clear survey of state of the art of NMR. Certainly the libraries of any teaching hospital, academic radiology, nuclear medicine and medical physics departments would all benefit from acquiring a copy of these proceedings.

D.N. TAYLOR
PRINCIPAL PHYSICIST
WALSGRAVE HOSPITAL
COVENTRY