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The Highlights Lectures, 1981-2009

Wagner, H.N.344 pages. Reston: 2015. ISBN 978-0-932004-91-8.

Field of Medicine: Nuclear Medicine, PET, Molecular Imaging and Hybrid Imaging.

Format: Hardcover book

Audience: Physicians, technologists, researchers, authors, residents and students who wish to learn more about the history of nuclear medicine, the background behind some of the studies currently being performed and some possible future directions for the profession.

Purpose: Dr. Henry Wagner would review posters, abstracts and other research presented at the Society of Nuclear Medicine (currently Society of Nuclear Medicine and Molecular Imaging), summarize the contents, discuss the usefulness and make predictions about the future of some of the procedures presented. This information would be delivered in the form of a highlights lecture at the end of the meeting. This book was compiled to have a print version of the individual lectures presented by Dr. Wagner in the years 1981-2009.

Content: This book does not have the traditional chapters arranged by content or theme. Each individual highlights lecture is listed separately with a table of contents indicating the page number for each individual year from 1981-2009.

Highlights: Dr. Wagner has a wonderful way of presenting the information that is clear, convincing and a joy to read. Written or presented information is only good if people are willing to read or listen to it. Dr. Wagner took great care to not only point people in the direction of useful procedures for a specific patient outcome, but also address those procedures that were not living up to the expectation and should be replaced by other studies. This honest perspective by

Dr. Wagner assures the reader that Dr. Wagner would not recommend a procedure, nuclear medicine related or otherwise if he did not believe it to be in the best interest of the patient.

Starting with the first lecture, 1981, an impact was made with several thoughts brought to mind, such as:

- Research is not lost even if it may not be useful for the specific purpose intended.
- A long time may be involved for a concept to become a useful procedure
- A large number of people and a great amount of teamwork is also needed for concepts to develop into useful procedures.
- Throughout, the lectures the issues, of reimbursement, cost effectiveness of the imaging procedures and what is in the best interest of the patient is focused on.

One example of an early concept becoming useful information in a variety of ways is the work of Heinrich, Schelbert and colleagues at UCLA regarding glucose metabolism and coronary artery disease. The idea that this may be useful information for PET imaging was mentioned in 1981. As the highlight lectures are read the incorporation of this information in other uses is visible. For example, the 1993 Highlights lecture, “Oncology a New Engine for SPECT/PET” reveals the same discussion of glucose utilization in terms of brain imaging for neuronal activity as well as oncology uses. As the lectures from later years continue, the increasing uses of FDG, the relationship between glucose utilization and determination of benign versus malignant tumors, and efficacy of treatment for a wide variety of cancers are important themes.

The 1981 lecture also referred to the work of Ronald Jaszczak on improvements to the camera systems and the studies produced using phantoms. The importance of technological

advances, along with advances in radiopharmaceuticals and education was also stressed. On page 36, from the 1986 highlights lecture, Dr. Wagner states:

> It behooves nuclear physicians who plan to be seriously involved in nuclear cardiology to spend the time and effort required to keep up with the important technical advances being made –including the new tracers such as isonitriles, SPECT, automated data processing, and a systematic approach to data handling.

Throughout the lectures Dr. Wagner comments on important advances in technology. Radiopharmaceuticals, computer technology, PACS and the internet and notes on multiple occasions how necessary these components are to advancing the field of nuclear medicine technology, molecular imaging and most importantly an improved method of diagnosis and prognosis for the patients.

An additional theme, cost containment and reimbursement is started on page 14, from the 1983 highlights lecture, "Increased attention to cost-containment is revealing that real savings result from better treatment, rather from decreasing diagnostic studies." Some of the methods of cost containment mentioned were the use of myocardial perfusion scans for diagnosis at an early stage to reduce the number of heart attacks and prognosis to reveal if a surgery will actually benefit the patient. Reducing the number of surgeries for cancer when there is evidence of distal metastases and an unsuccessful surgery was just one of the many examples. An additional example was the use of sentinel node imaging and intraoperative probes to help pinpoint the sentinel node and possibly eliminate complete lymph node dissection. On page 145 from the 1997 highlights lecture regarding a study by Valk and Colleagues from Sacramento, CA, a savings of $1800 per patient was calculated. "The finding of distant metastatic disease by whole-body FDG-PET imaging resulted in the cancellation of six lung resections, four lymph node

dissections, two liver resections, one laparotomy and one pelvic exenteration." Over and over again as many examples of cost reduction is noted, also noted is the fact that the costs are referring only to actual surgery and not the possible adverse events as a result of surgery. If all of this was factored in as well and the risk of adverse events from surgery compared to that of diagnostic testing the cost savings can be much higher.

Dr. Wagner mentioned on numerous occasions, when a certain diagnostic test was touted as the best that that particular test would be best for certain situations and not others or that multiple tests should be used or that there was now a better test that would provide better patient results. Dr. Wagner always stressed trying to achieve 100% accuracy with the diagnostic tests. He at times advocated for blood tests, CT, MRI, SPECT or MRI. His theme was always we should not be looking at these as competing modalities, but that all modalities were useful and many times should be combined. Dr. Wagner supported hybrid imaging, chemistry, genetics, molecular imaging and had a way of explaining how everything works together.

The later lectures are a reflection of the growth of technology with advances in molecular imaging to include somatostatin receptor imaging, new agents to study Parkinson's disease, cadmium telluride detectors and solid state detectors. It is only fitting that Dr. Wagner should title his final lecture as, "Creating a New, Smarter Health Care" as this was Dr. Wagner's focus throughout the entire lecture series.

Limitations: These lectures were not intended and should not be used as a protocol or procedure for current practice. The last lecture presented was in 2009 and in reading this book it is clear that Dr. Wagner would intend for anyone involved in the field of nuclear medicine or molecular imaging to be constantly and consistently updated their knowledge to reflect best practices of the time.

This book is also written as a series of lectures with multiple topics for each session so it cannot be read as a traditional topic focused book.

Reviewed by:

Heather Poulin, MS, R.T.N.M, CNMT