

# Nuclear Hepatology: A Textbook of Hepatobiliary Diseases

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The authors state that this textbook is intended to serve as a ready reference as well as a clinical and procedural guide. For the most part, I believe the book has achieved these goals. It is certainly an excellent ready reference and procedural guide, but clinicians other than radiologists and nuclear physicians may find its worth as a clinical guide to be limited.

The book is divided into 12 well-developed chapters. Chapter 1 deals with methodology and microstructure of the hepatobiliary system followed by function of the liver and spleen in chapter 2. Chapter 3 gives a general description of the imaging agents used in nuclear medicine. Chapter 4 describes liver and spleen imaging methodology, including general imaging principles as well as details of differentiation between adenoma and focal nodule hyperplasia versus hemangioma; this chapter also discusses somatostatin receptor scintigraphy. Chapter 5 discusses imaging and quantification of hepatobiliary function and general quantification of  $^{99m}\text{Tc}$ -hepatoiminodiacetic acid, as well as measurements of hepatic arterial blood flow versus portal venous blood flow. The chapter also discusses quantification of hepatobiliary function in other conditions, like hepatopulmonary syndrome and duodenogastric bile reflux.

Chapter 6 discusses the opioid relationship with the gallbladder, Oddi's sphincter, and cholecystokinin in health and in disease. Chapters 7 and 8 discuss intrahepatic cholestasis and extrahepatic cholestasis, respectively. Chapter 9 provides much more detail on the diseases of the gallbladder, including chronic and acute cholecystitis, as well as cystic duct syndromes. Chapter 10, which is devoted to biliary dyskinesia, is particularly well written. Chapter 11, which covers pediatric nuclear hepatology, concentrates on congenital biliary atresia and cystic disease of the hepatobiliary system, including a good discussion on choledochal cysts. Finally, chapter 12 discusses liver transplantation, specifically the role played by hepatobiliary imaging.

I thoroughly enjoyed reviewing this succinctly written book. Even though it is a two-author book, there is no disjointedness and the chapters flow seamlessly. A major feature of this book is the extensive subdivision of each

chapter; references are given after each subsection, not combined at the end of the chapter. Each subsection also provides an interesting historic perspective. Most of the chapters are well written, containing a significant amount of general clinical discussion beyond just scintigraphic imaging. For example, chapter 1 contains a good discussion on embryology of the liver and related structures, followed by a good discussion of anatomy and then physiology in subsequent chapters. The discussion of imaging agents is covered in detail. Scintigraphic images, in both qualitative and quantitative analyses, are very well done throughout the book. The discussion on cystic duct syndrome (or chronic acalculous cholecystitis) and the chapter on biliary dyskinesia are both excellent; these subjects are, generally, poorly explained in other texts.

Although weaknesses of this book are relatively minor, I hope the authors will revisit some areas in their second edition. In chapter 1, for example, I would like to have seen more congenital anomalies discussed as a subsection of embryology. Conditions such as intrahepatic gallbladder and bile duct anomalies were not well covered. The authors discuss octreotide scanning for somatostatin receptors in two chapters but neglect to mention metaiodobenzylguanidine, a competitor of OctreoScan (Mallinckrodt, Inc., St. Louis, MO) for neuroendocrine tumors. The discussion on postoperative leaks, especially a postlaparoscopic cholecystectomy, is well done, but the authors do not discuss other postoperative hepatobiliary imaging findings in any detail, such as after Roux-en-Y surgery or after the kasai procedure for primary biliary atresia in pediatrics. There is also little discussion on the role of gallium imaging and  $^{111}\text{In}$ -leukocyte imaging in liver disease, especially status-post-liver transplant. These infection imaging agents are extensively used by liver transplant surgeons and deserve a place in this otherwise wonderful book.

In conclusion, this book is packed with useful information on nuclear hepatology that will be most appreciated by all practicing nuclear physicians and radiologists. With the increasing use of hepatoiminodiacetic acid cholescintigraphy, this book is almost a must for all imagers and will be useful for clinicians caring for pa-

tients with hepatobiliary disease or liver transplants. The competition is a combination of a good textbook of nuclear medicine (which it clearly surpasses) plus a comprehensive clinical Hepatotoxicology textbook. I heartily recommend this text and am glad that I had the opportunity to review it and

retain my copy. It will be a great reference for all my radiology and nuclear residents.

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