
Medical Radiology

Diagnostic Imaging

Series Editors

Albert L. Baert
Maximilian F. Reiser
Hedvig Hricak
Michael Knauth

Editorial Board

Andy Adam, London
Fred Avni, Brussels
Richard L. Baron, Chicago
Carlo Bartolozzi, Pisa
George S. Bisset, Durham
A. Mark Davies, Birmingham
William P. Dillon, San Francisco
D. David Dershaw, New York
Sam Sanjiv Gambhir, Stanford
Nicolas Grenier, Bordeaux
Gertraud Heinz-Peer, Vienna
Robert Hermans, Leuven
Hans-Ulrich Kauczor, Heidelberg
Theresa McLoud, Boston
Konstantin Nikolaou, Munich
Caroline Reinhold, Montreal
Donald Resnick, San Diego
Rüdiger Schulz-Wendtland, Erlangen
Stephen Solomon, New York
Richard D. White, Columbus

For further volumes:
<http://www.springer.com/series/4354>

Patrice Taourel
Editors

CT of the Acute Abdomen

Foreword by
Albert L. Baert

 Springer

Editor

Prof. Dr. Patrice Taourel
Imagerie Médicale
Hôpital Lapeyronie
avenue du Doyen Gaston Giraud 371
34295 Montpellier CX 5
France
e-mail: p-taourel@chu-montpellier.fr

ISSN 0942-5373

ISBN 978-3-540-89231-1

e-ISBN 978-3-540-89232-8

DOI 10.1007/978-3-540-89232-8

Springer Heidelberg Dordrecht London New York

Library of Congress Control Number: 2011935932

© Springer-Verlag Berlin Heidelberg 2011

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilm or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

The use of general descriptive names, registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

Product liability: The publishers cannot guarantee the accuracy of any information about dosage and application contained in this book. In every individual case the user must check such information by consulting the relevant literature.

Cover design: eStudio Calamar S.L.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Foreword

Radiological imaging plays a key role in the correct differential diagnosis and the decision-making for medical or surgical treatment of acute abdominal conditions.

For many decades and until the advent of CT, standard radiography was the main imaging tool to guide clinicians towards the correct management of the patients. Notwithstanding the sophisticated rules and guidelines that were invented and developed over the years by many highly talented radiologists, for the optimal interpretation of the standard radiogram of the abdomen; the important limitations of this diagnostic tool, which could mostly provide only indirect evidence for the cause or the site of the lesions, remained painfully evident in our daily practice.

The introduction of CT, especially the multislice technology and the multiplanar reconstructions, have opened immense new opportunities and possibilities for the rapid and exact diagnosis as well as for the evaluation of the extent of lesions in the patient with an acute abdominal condition and has profoundly changed the diagnostic approach of these patients.

This volume offers a comprehensive and detailed description of the optimal use of CT in acute abdomen and of the wide range of its clinical applications in this large group of patients. The text is supported by numerous, high-quality images, well-chosen to illustrate the key-CT findings in a Broad Spectrum of traumatic and non-traumatic acute abdomen.

I am indebted to the editor, P. Taourel, an internationally well known abdominal radiologist, with a long experience in abdominal CT for his outstanding editorial coordination and for his personal contributions to this work. I am also very grateful for the high-level contributions from a large group of other recognised experts in the field.

This excellent volume will greatly appeal to not only the general, abdominal as well as emergency radiologists but also to gastroenterologists and abdominal surgeons, who will find this book a great help for the better management of their patients.

I am convinced that it will meet great interest of the readership for our series: Medical Radiology.

Albert L. Baert

Contents

Part I Epidemiological Data and Clinical Findings

Epidemiology of Acute Abdominal Pain in Adults in the Emergency Department Setting	3
Mustapha Sebbane, Richard Dumont, Riad Jreige, and Jean-Jacques Eledjam	
Epidemiology of Abdominal Trauma	15
Françoise Guillon	

Part II Elementary CT Findings

Key CT Findings	31
Eric Delabrousse	

Part III CT Techniques

Volume CT of Acute Abdomen: Acquisition and Reconstruction Techniques	65
Samuel Mérigeaud, Ingrid Millet, Fernanda Curros-Doyon, and Patrice Taourel	

Part IV CT Diagnosis in Non Traumatic Abdomen

Acute Liver Disease	83
Valérie Vilgrain and François Durand	
Biliary Emergencies	93
Yves Menu, Julien Cazejust, Ana Ruiz, Louisa Azizi, and Lionel Arrivé	
Acute Splenic Disease	115
Eric Delabrousse	
Acute Pancreatitis	125
Catherine Ridereau-Zins and Christophe Aubé	

Acute Appendicitis	143
Samuel Mériegeaud, Ingrid Millet, and Patrice Taourel	
Ischemia (Acute Mesenteric Ischemia and Ischemic Colitis)	183
Stefania Romano and Luigia Romano	
Diverticulitis	199
Jean-Michel Bruel and Patrice Taourel	
Nonischemic Colitis	221
Philippe Soyer, Mourad Boudiaf, Youcef Guerrache, Christine Hoeffel, Xavier Dray, and Patrice Taourel	
Acute Gastritis and Enteritis	239
Denis Régent, Valerie Croisé-Laurent, Julien Mathias, Aurélia Fairise, Hélène Ropion-Michaux, and Clément Proust	
Bowel Obstruction	273
Patrice Taourel, Denis Hoa, and Jean-Michel Bruel	
Bowel Perforations	309
Patrice Taourel, Joseph Pujol, and Emma Pages-Bouic	
Acute Gastrointestinal Bleeding	329
Benoît Paul Gallix	
Intra- and Retroperitoneal Hemorrhages	343
Philippe Otal, Julien Auriol, Marie-Charlotte Delchier, Marie-Agnès Marachet, and Hervé Rousseau	
Urological Emergencies	359
Patrice Taourel and Rodolphe Thuret	
Gynecologic Emergencies	377
Patrice Taourel, Fernanda Curros Doyon, and Ingrid Millet	
Acute Diseases Related to Intra-abdominal Fat in Adults	393
Etienne Danse	
Acute Disease of the Abdominal Wall	399
Catherine Cyteval	
Complications of Abdominal Surgery (Abdominal, Urologic and Gynecologic Emergencies)	409
Marc Zins and Isabelle Boulay-Coletta	

Part V CT Diagnosis in Traumatic Abdomen

Abdominal Trauma 421
Ingrid Millet and Patrice Taourel

Index 465