LEARN • REVISE • REINFORCE

Small Animal Imaging

John S. Mattoon Dana Neelis







Clinical cases Problem based Fully illustrated



Self-Assessment Review Small Animal Imaging

Also available in the Veterinary Self-Assessment Color Review series:

Brown & Rosenthal: Small Mammals Cian & Freeman: Veterinary Cytology: Dog, Cat, Horse and Cow Elsheikha & Patterson: Veterinary Parasitology Forbes & Guzman: Avian Medicine and Surgery Freeman: Veterinary Cytology Frye & Williams: Reptiles and Amphibians Hartmann & Sykes: Canine Infectious Diseases Hartmann & Levy: Feline Infectious Diseases Keeble & Meredith: Rabbit Medicine and Surgery Kirby, Rudloff & Linklater: Small Animal Emergency and Critical Care Medicine Lewbart: Ornamental Fishes and Aquatic Invertebrates Mair & Divers: Equine Internal Medicine May & McIlwraith: Equine Orthopaedics and Rheumatology Meredith & Keeble: Wildlife Medicine and Rehabilitation Moriello: Small Animal Dermatology Moriello & Diesel: Small Animal Dermatology, Advanced Cases Obradovich: Small Animal Clinical Oncology Pycock: Equine Reproduction and Stud Medicine Samuelson & Brooks: Small Animal Ophthalmology Scott: Cattle and Sheep Medicine Sparkes & Caney: Feline Medicine Tennant: Small Animal Abdominal and Metabolic Disorders Thieman-Mankin: Small Animal Soft Tissue Surgery Verstraete: Veterinary Dentistry Ware: Small Animal Cardiopulmonary Medicine

Self-Assessment Review

Small Animal Imaging

John S. Mattoon DVM, DACVR Washington State University College of Veterinary Medicine Pullman, Washington, USA

Dana A. Neelis

DVM, MS, DACVR Animal Imaging Irving, Texas, USA



CRC Press is an imprint of the Taylor & Francis Group, an **informa** business

CRC Press Taylor & Francis Group 6000 Broken Sound Parkway NW, Suite 300 Boca Raton, FL 33487-2742

© 2018 by Taylor & Francis Group, LLC CRC Press is an imprint of Taylor & Francis Group, an Informa business

No claim to original U.S. Government works

Printed on acid-free paper

International Standard Book Number-13: 978-1-4822-2520-4 (Paperback) International Standard Book Number-13: 978-1-138-09149-8 (Hardback)

This book contains information obtained from authentic and highly regarded sources. Reasonable efforts have been made to publish reliable data and information, but the author and publisher cannot assume responsibility for the validity of all materials or the consequences of their use. The authors and publishers have attempted to trace the copyright holders of all material reproduced in this publication and apologize to copyright holders if permission to publish in this form has not been obtained. If any copyright material has not been acknowledged please write and let us know so we may rectify in any future reprint.

Except as permitted under U.S. Copyright Law, no part of this book may be reprinted, reproduced, transmitted, or utilized in any form by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying, microfilming, and recording, or in any information storage or retrieval system, without written permission from the publishers.

For permission to photocopy or use material electronically from this work, please access www. copyright.com (http://www.copyright.com/) or contact the Copyright Clearance Center, Inc. (CCC), 222 Rosewood Drive, Danvers, MA 01923, 978-750-8400. CCC is a not-for-profit organization that provides licenses and registration for a variety of users. For organizations that have been granted a photocopy license by the CCC, a separate system of payment has been arranged.

Trademark Notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Visit the Taylor & Francis Web site at http://www.taylorandfrancis.com

and the CRC Press Web site at http://www.crcpress.com

Contents

Preface		vii
Acknowledg	ments	viii
Broad Class	ification of Cases	ix
Normal Dog	g and Cat Anatomy	xi
Section 1:	Thorax	
	Questions	
	Answers	
Section 2:	Abdomen	
	Ouestions	
	Answers	
Section 3:	Musculoskeletal System	
	Questions	
	Answers	
Index		

Normal Dog and Cat Anatomy



Figure A Dog thorax right lateral projection.



Figure B Dog abdomen left lateral projection.



Figure C Dog abdomen ventrodorsal projection.



Figure D Cat thorax right lateral projection.



Figure E Cat thorax ventrodorsal projection.



Figure F Cat abdomen left lateral projection.



Figure G Cat abdomen ventrodorsal projection.



Figure H Heart clockface analogy, lateral projection. Ao = aorta; BR = brachiocephalic artery; CV = cranial vena cava; LPA = left pulmonary artery; LS = left subclavian artery; LAU = left auricle; LA = left atrium; LV = left ventricle; RV = right ventricle; PA = pulmonary artery; CVC = caudal vena cava; RAU = right auricle; RPA = right pulmonary artery.



Figure I Heart clockface analogy, dorsoventral projection. 11-1 o'clock position = location of the aortic arch; 1-2 o'clock position = location of the main pulmonary artery; 2-3 o'clock position = area of the left auricle, which will protrude in cases of left atrial enlargement; between 3 and 6 o'clock = left ventricle, including the apex of the heart; between 6 and 9 o'clock = right ventricle; 9 to 11 o'clock = right atrium.



Figure J Heart ventrodorsal projection; aorta and left ventricle.



Figure K Heart ventrodorsal projection; right atrium.



Figure L Heart ventrodorsal projection left atrium and auricle.



Figure M Heart ventrodorsal projection; right ventricle and main pulmonary artery.



Figure N Cranial pulmonary vessels.



Figure O Right and left caudal pulmonary arteries.



Figure P Surfaces of the lungs. The seven lung lobes of the dog are outlined on the dorsoventral view. These include the right cranial, middle and caudal lobes; the left cranial (cranial and caudal segments) and caudal lobes; and the accessory lung lobe located centrally and caudal to the heart.

Section I: THORAX

Thorax Questions

CASE 1.1 A 7-year-old neutered male Labrador Retriever who was hit by a car. You obtain these thoracic radiographs: Figs. 1.1a, b, left and right lateral projections, respectively; Figs. 1.1c, d, ventrodorsal and dorsoventral projections, respectively.

- 1 What are your radiographic findings?
- 2 What is your radiographic diagnosis?

