CHURCHILL'S
POCKETBOOKS

Differential Diagnosis

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THIRD EDITION

CHURCHILL
LIVINGSTONE
ELSEVIER

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Differential Diagnosis

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EDINBURGH LONDON NEW YORK OXFORD
PHILADELPHIA ST LOUIS SYDNEY TORONTO 2010

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ISBN 978-0-7020-3222-6
International ISBN 978-0-7020-3223-3

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
A catalog record for this book is available from the Library of Congress

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The Publisher

Printed in China

PREFACE

We are grateful to the publishers, Elsevier, for the invitation to produce a third edition of the *Pocketbook of Differential Diagnosis*. Being in the twilight of his career, the senior author (A.T.R) felt that a further, younger co-author would be helpful in bringing the book up to date. We are pleased that Andrew Ostor, Consultant Rheumatologist at Addenbrooke's Hospital, Cambridge, has agreed to fill this role. It is now eight years since the first edition and four years since the second and in that time Eric Lim has progressed from Senior House Officer on the first edition, to Registrar on the second and is now a Consultant Thoracic Surgeon. Much has changed in that time and most of the chapters have been updated. New chapters on halitosis, hallucinations, nail abnormalities, rashes, thirst, tiredness and vaginal discharge have been added. We have also attempted to indicate the relative frequency of the various conditions by colour coding them according to whether they are considered common (green), occasional (orange) or rare (red).

We have also added new sections on biochemistry (Section B) and haematology (Section C). These list the causes of such things as hypokalaemia, hypercalcaemia, leucocytosis and anaemia and have been written in a slightly different style from the main clinical section. They provide a ready check for assessing abnormal biochemical and haematological results.

We have welcomed comments from teachers and students who have suggested additions and corrections and these have been taken into account when writing this third edition. We are pleased with the way that the first and second editions have sold and that, in these days of self-directed problem-based learning, medical students still see the need for a book offering a didactic approach.

When we originally wrote the first edition of this book, we hoped it would fit into the 'white coat pocket' and be useful on the wards. Now with the 'bare below the elbow' edict, we hope that you will have large enough pockets in the new dress code-compliant uniforms to accommodate it! We hope it will continue to help you on the wards and in the clinics – and in examinations.

A.T.R. Sheffield
E.L. London
A.J.K.O. Cambridge

ACKNOWLEDGEMENTS

We wish to thank all those who have contributed to the successive editions of this book. We would particularly like to express our thanks to our junior staff and medical students who have suggested corrections, amendments and improvements to the book. Any errors that may have occurred however remain our responsibility. We would also like to thank our wives for their patience and encouragement shown throughout the production of this third edition. Mr Raftery would like to thank his secretary, Mrs Denise Smith, for the hard work and long hours she has put in to typing and re-typing the manuscript into its final form for publication (Mr Raftery cannot use a word processor!).

HOW TO USE THIS BOOK

This book has been written in three sections: Clinical Presentations, Biochemical Presentations and Haematological Presentations.

In the Clinical Presentations section (Section A), we have attempted to indicate the relative frequency of the conditions causing the various symptoms and signs by colour coding them in green, orange and red, according to whether they are considered common, occasional or rare, respectively.

- A common cause of the symptom or sign
- Might occasionally give rise to the symptom or sign
- Will only rarely cause the symptom or sign

This has been no easy task (and indeed in the Biochemical Presentations and Haematological Presentations sections we found it so difficult that we abandoned it) but we hope that it will indicate to readers whether they are dealing with a common, occasional or rare disorder. It is appreciated that some conditions may be common in the UK and rare in other parts of the world (and *vice versa*). Where this is the case, the appropriate colour coding is indicated in brackets, e.g. *Campylobacter* is a common cause of diarrhoea in the UK and therefore coded green but rare in tropical Africa and therefore coded red and in brackets. We have tried to indicate the importance of the condition, not only in causing a particular symptom or sign, but also in its overall incidence, e.g. diverticular disease is a common condition and is a common cause of pain in the left iliac fossa and is therefore coded green. It is only an occasional cause of large bowel obstruction and in this context is coded orange.

At the end of each chapter the reader will find a box containing either what we consider to be important learning points, or indicating symptoms and signs suggestive of significant pathology which require urgent action.

ABBREVIATIONS

ABC	airway, breathing and circulation
ABGs	arterial blood gases
AC	air conduction
ACE	angiotensin-converting enzyme
ACTH	adrenocorticotrophic hormone
ADH	antidiuretic hormone
AF	atrial fibrillation
AFP	alpha fetoprotein
AIDS	acquired immunodeficiency syndrome
ANA	antinuclear antibody
ANCA	antineutrophil cytoplasmic antibody
ANF	antinuclear factor
anti-CCP	anti-cyclic citrullinated peptide
AP	anteroposterior
APTT	activated partial thromboplastin time
ARF	acute renal failure
AXR	abdominal X-ray
BC	bone conduction
BCG	bacille Calmette–Guérin
BPPV	benign paroxysmal positional vertigo
BUN	blood urea nitrogen
c-ANCA	cytoplasmic-staining antineutrophil cytoplasmic antibody
CAPD	continuous ambulatory peritoneal dialysis
CCF	congestive cardiac failure
CK-MB	creatine kinase–myocardial type
CMV	cytomegalovirus
CNS	central nervous system
COPD	chronic obstructive pulmonary disease
CRF	chronic renal failure
CREST	calcinosis cutis–Raynaud phenomenon–oesophageal hypomobility–sclerodactyly–telangiectasia
CRP	C-reactive protein
C&S	culture and sensitivity
CSF	cerebrospinal fluid
CT	computerised tomography
CVA	cerebrovascular accident
CVP	central venous pressure
CXR	chest X-ray
DDAVP	1-deamino-8-D-arginine vasopressin
DDH	developmental dysplasia of the hip
DHEA	dehydroepiandrosterone
DIC	disseminated intravascular coagulation
DIP	distal interphalangeal
DMSA	dimercaptosuccinic acid
DVT	deep venous thrombosis
EBV	Epstein–Barr virus
ECG	electrocardiogram

EEG	electroencephalogram
ELISA	enzyme-linked immunosorbent assay
EM	electron microscope
EMG	electromyography
EMSU	early morning specimen of urine
ERCP	endoscopic retrograde cholangiopancreatography
ESR	erythrocyte sedimentation rate
FBC	full blood count
FEV1	forced expiratory volume (1 second)
FNAC	fine-needle aspiration cytology
FSH	follicle-stimulating hormone
FVC	forced vital capacity
GBM	glomerular basement membrane
GCS	Glasgow Coma Scale
GI	gastrointestinal
GORD	gastro-oesophageal reflux disease
G6PD	glucose-6-phosphate dehydrogenase
GTN	glyceryl trinitrate
GUM	genito-urinary medicine
Hb	haemoglobin
βHCG	β-human chorionic gonadotrophin
5HIAA	5-hydroxyindoleacetic acid
HIV	human immunodeficiency virus
IGF-1	insulin growth factor-1
Ig	immunoglobulin
IP	interphalangeal
ITP	idopathic thrombocytopenic purpura
IVC	inferior vena cava
IVU	intravenous urography
JVP	jugular venous pressure
KUB	kidney ureter bladder (plain X-ray)
LDH	lactate dehydrogenase
LFTs	liver function tests
LH	luteinising hormone
LIF	left iliac fossa
LVF	left ventricular failure
MAG3	mercapto acetyl triglycine
MCH	mean corpuscular haemoglobin
MCHC	mean corpuscular haemoglobin concentration
MCP	metacarpophalangeal
MCV	mean corpuscular volume
ME	myalgic encephalomyelitis
MEN	multiple endocrine neoplasia
MRA	magnetic resonance angiography
MRCP	magnetic resonance cholangiopancreatography
MRI	magnetic resonance imaging
MSU	midstream specimen of urine
MTP	metatarsophalangeal

NSAID	non-steroidal anti-inflammatory drug
NSTEMI	non-ST elevation myocardial infarction
OGD	oesophagogastroduodenoscopy
PAS	periodic acid–Schiff
PCR	polymerase chain reaction
PCV	packed cell volume
PIP	proximal interphalangeal
PR	per rectum
PSA	prostate specific antigen
PT	prothrombin time
PTC	percutaneous transhepatic cholangiography
PTH	parathyroid hormone
PV	per vaginam
RAST	radio allergen sorbent test
RBC	red blood cell
RDW	red cell distribution width
RF	rheumatoid factor
RTA	road traffic accident
SIADH	syndrome of inappropriate ADH secretion
SLE	systemic lupus erythematosus
STD	sexually transmitted disease
STEMI	ST segment elevation infarction
T_4	thyroxine
TATTS	'tired all the time' syndrome
TB	tuberculosis
TFT	thyroid function test
TIA	transient ischaemic attack
TIBC	total iron-binding capacity
TPN	total parenteral nutrition
TSH	thyroid-stimulating hormone
TT	thrombin time
U&Es	urea and electrolytes
US	ultrasonography
UTI	urinary tract infection
VDRL	Venereal Disease Research Laboratory
V/Q	ventilation/perfusion ratio
WCC	white cell count

CONTENTS

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SECTION A

CLINICAL PRESENTATIONS

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ABDOMINAL PAIN

Abdominal pain is an extremely common presenting symptom. The pain may be acute (sudden onset) or chronic (lasting for more than a few days or presenting intermittently). It is important to be able to distinguish causes of abdominal pain which need urgent surgery, e.g. ruptured aortic aneurysm, perforated diverticular disease, from those that do not, e.g. biliary colic, ureteric colic, acute pancreatitis. The causes of abdominal pain are legion and the list below contains some of the more common causes but is not intended to be comprehensive.

CAUSES

GASTROINTESTINAL

GUT

Gastroduodenal

- Peptic ulcer
- Gastritis
- Malignancy
- Gastric volvulus

Intestinal

- Appendicitis
- Obstruction
- Diverticulitis
- Gastroenteritis
- Mesenteric adenitis
- Strangulated hernia
- Inflammatory bowel disease
- Intussusception
- Volvulus
- TB
  - (common in parts of the world where TB is endemic)

HEPATOBILIARY

- Acute cholecystitis
- Chronic cholecystitis
- Cholangitis
- Hepatitis

PANCREATIC

- Acute pancreatitis
- Chronic pancreatitis
- Malignancy

SPLENIC

- Infarction
- Spontaneous rupture

URINARY TRACT

- Cystitis
- Acute retention of urine
- Acute pyelonephritis
- Ureteric colic
- Hydronephrosis
- Tumour
- Pyonephrosis
- Polycystic kidney

GYNAECOLOGICAL

- Ruptured ectopic pregnancy
- Torsion of ovarian cyst
- Ruptured ovarian cyst
- Salpingitis
- Severe dysmenorrhoea
- Mittelschmerz
- Endometriosis
- Red degeneration of a fibroid

VASCULAR

- Aortic aneurysm
- Mesenteric embolus
- Mesenteric angina (claudication)
- Mesenteric venous thrombosis
- Ischaemic colitis
- Acute aortic dissection

PERITONEUM

- Secondary peritonitis
- Primary peritonitis

ABDOMINAL WALL

- Strangulated hernia
- Rectus sheath haematoma
- Cellulitis

RETROPERITONEUM

- Retroperitoneal haemorrhage, e.g. anticoagulants

REFERRED PAIN

- Myocardial infarction
- Pericarditis
- Testicular torsion
- Pleurisy
- Herpes zoster
- Lobar pneumonia
- Thoracic spine disease, e.g. disc, tumour

'MEDICAL' CAUSES

- Hypercalcaemia
- Uraemia
- Diabetic ketoacidosis
- Sickle cell disease
- Addison's disease
- Acute intermittent porphyria
- Henoch–Schönlein purpura
- Tabes dorsalis

HISTORY

Age

Certain conditions are more likely to occur in certain age groups, e.g. mesenteric adenitis in children, diverticular disease in the elderly.

Pain

- Time and mode of onset, e.g. sudden, gradual.
- Character, e.g. dull, vague, cramping, sharp, burning.
- Severity.
- Constancy, e.g. continuous (peritonitis); intermittent (pain of intestinal colic).
- Location: where did it start? Has it moved?
- Radiation, e.g. loin to groin in ureteric colic.
- Effect of respiration, movement, food, defecation, micturition and menstruation.
- Vomiting.
- Did vomiting precede the pain?
- Frequency.
- Character, e.g. bile, faeculent, blood, coffee grounds.

Defecation

- Constipation: absolute constipation with colicky abdominal pain, distension and vomiting suggests intestinal obstruction.
- Diarrhoea: frequency, consistency of stools, blood, mucus, pus.

Fever

- Any rigors.

Past history

- Previous surgery, e.g. adhesions may cause intestinal obstruction.
- Recent trauma, e.g. delayed rupture of spleen.
- Menstrual history, e.g. ectopic pregnancy.

EXAMINATION

General

Is the patient lying comfortably? Is the patient lying still but in pain, e.g. peritonitis? Is the patient writhing in agony, e.g. ureteric or biliary colic? Is the patient flushed, suggesting pyrexia?

Pulse, temperature, respiration

Pulse and temperature are raised in inflammatory conditions. They may also be raised with impending infarction of bowel. An increased respiratory rate might suggest chest infection referring pain to the abdomen.

Cervical lymphadenopathy

Associated with mesenteric adenitis.

Chest

Referred pain from lobar pneumonia.

Abdomen

- Inspection. Does the abdomen move on respiration? Look for scars, distension, visible peristalsis (usually due to chronic obstruction in patient with very thin abdominal wall). Check the hernial orifices. Are there any obvious masses, e.g. visible, pulsatile mass to suggest aortic aneurysm?
- Palpation. The patient should be relaxed, lying flat, with arms by side. Be gentle and start as far from the painful site as possible. Check for guarding and rigidity. Check for masses, e.g. appendix mass, pulsatile expansile mass to suggest aortic aneurysm. Carefully examine the hernial orifices. Examine the testes to exclude torsion.
- Percussion, e.g. tympanitic note with distension with intestinal obstruction; dullness over bladder due to acute retention.
- Auscultation. Take your time (30–60 s); e.g. silent abdomen of peritonitis; high-pitched tinkling bowel sounds of intestinal obstruction.

Rectal examination

Always carry out a rectal examination.

Vaginal examination

There may be discharge or tenderness associated with pelvic inflammatory disease. Examine the uterus and adnexa, e.g. pregnancy, fibroids, ectopic pregnancy.

GENERAL INVESTIGATIONS

- **FBC, ESR**
  Hb ↓ peptic ulcer disease, malignancy. WCC ↑ infective/inflammatory disease, e.g. appendicitis, diverticulitis. ESR ↑ Crohn's disease, TB.
- **U&Es**
  Urea and creatinine ↑ uraemia. Electrolyte disturbances in vomiting and diarrhoea.
- **LFTs**
  Abnormal in cholangitis and hepatitis. Often abnormal in acute cholecystitis.
- **Serum amylase**
  Markedly raised in acute pancreatitis. Often moderately raised with perforated peptic ulcer or infarcted bowel.
- **MSU**
  Blood, protein, culture positive in pyelonephritis. Red cells in ureteric colic.
- **CXR**
  Gas under diaphragm (perforated viscus). Lower lobar pneumonia (referred pain).
- **AXR**
  Obstruction – dilated loops of bowel. Site of obstruction. Local ileus (sentinel loop) – pancreatitis, acute appendicitis. Toxic dilatation – dilated, featureless, oedematous colon in ulcerative colitis or Crohn's disease. Renal calculi. Calcified aortic aneurysm. Air in biliary tree (gallstone ileus). Gallstones (10% radio-opaque).
- **US**
  Localised abscesses, e.g. appendix abscess, paracolic abscess in diverticular disease. Free fluid – peritonitis, ascites. Aortic aneurysm. Ectopic pregnancy. Ovarian cyst. Gallstones. Empyema, mucocele of gall bladder. Kidney – cysts, tumour.

SPECIFIC INVESTIGATIONS

- **Blood glucose**
  Raised in diabetic ketoacidosis.
- **Serum calcium**
  Hypercalcaemia.
- **CRP**
  Crohn's disease.
- **VDRL**
  Syphilis (tabes dorsalis).
- **Sickling test**
  Sickle cell disease.